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ADEQUATE MEDICAL SERVICE FOR A COMMUNITY

SOME FACTORS OF IMPORTANCE *

W. H. SMITH, M.D.

BALTIMORE

During four days of this week, symposiums are being held in which experts are discussing phases of medical education, both for undergraduates and graduates, medical examination and licensure, hospital service, and methods of organizing for public health service in both urban and rural communities. What is the significance of such discussions? It is all for the purpose of deciding how best to provide adequate medical service for a community. We are all working in our own special fields to accomplish that purpose, and let us hope that these meetings are indicative of a spirit of team work as a future policy. As expressed by Dr. Haven Emerson: [1]

> Three services we shall always need if we intend to provide the best that science affords to heal the sick and guard the well against disease. Each service, although indispensable by and for itself, is, however, necessarily dependent upon the other two for its complete usefulness and application, and no one can be omitted without sacrifice of much of value of the others. Diagnosis and treatment of the sick comes first to mind as it was first to be provided, but first by a narrow margin of time before the teaching of medicine. These two led by many ages the third, the prevention of disease.
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> We have won our way from an attitude of passive submission or acceptance of disease and disability as inflections of fate, of some evil genius, or by the Gods of our own Divinity, through the self-respecting and upright position of self defense against disease, using the weapons of science, until we are now moving aggressively forward attacking disease and determined to overcome it by all the resources of society as well as by assembling, coordinating, directing, with our knowledge of preventive medicine and organized government, a continuous warfare upon all the physical, biological, economic and spiritual handicaps against which man and child cannot successfully make progress alone.

During the memory of every man here a complete change has taken place in the attitude of the public toward the hospital, in the relationship of the hospital to the community, and in the practice of medicine in its various forms.

THREE INDISPENSABLE SERVICES

In considering this subject let us get before us certain facts from which to start. Three services we shall always need: medical teaching, preventive medicine, and diagnosis and treatment. Much progress has been made in developing those three services. We are a new country; and while every phase of our development has been progressive, since we did not start out with a well defined theory to be put into practice, each step in our development has been an attempt to supply a practical solution to a new demand.

Consider the rapid growth of this country, the development of urban life, the concentration of 50 per cent. of the population within restricted areas, attended with overcrowding and unhygienic living conditions, the influx of hordes of immigrants with a total lack of any decent standards of living, the growth of great industrial centers, and we have a picture that accounts for the fact that until comparatively recently the development of our medical resources has been largely in response to the demands of the situation arising from such conditions. This has resulted in the concentration of our hospitals and other health agencies, as well as the medical profession in these urban centers, while the other 50 per cent. of the population has been largely neglected or at least inadequately provided for. Neither the urban nor the rural problems are sufficiently under control, owing to the practice of meeting demands as they arose, without any constructive program based on a vision of adequate medical service.

All of these factors, together with the overwhelming demands made on the profession, the constant effort toward reorganization of our system of medical education, the development of the science and art of medicine, have resulted in what may be called emergency organization.

In spite of the constant struggle by the medical profession to keep pace with its own development and the demands of public welfare, nevertheless we may view with pride the record of American medicine, its educational institutions, its investigators, its clinicians, its surgeons, its hospitals and its national organizations. On the other hand, we must not overlook the fact that we are far from having accomplished the best development of our resources and that there is much to be done to strengthen the weak points in our system.

I wish to touch briefly on some of the weak points. I would not presume to offer remedies or to answer the many questions raised, but rather to present a panoramic view, so to speak, believing that we must keep before us the whole problem in order that, by better coordination of the energies and resources of the various agencies, we may eventually develop a more definite, more logical, a more far-sighted and constructive program.

We have an ever increasing number of associations—state, sectional, national and international. They are no doubt useful; in fact, many of them have accomplished much good. Each is working along its own lines on

* Read before the Annual Conference on Medical Education and Hospitals, Licensure and Public Health, Chicago, March 9, 1921.

1. Cleveland Survey Report.

some phase or phases of the common problem. The result is not infrequently overlapping, duplication and occasionally a crossing of purposes with the consequent waste of time, energy, money and confusion.

Remembering that "three services we shall always need, and that each service, though indispensable by and for itself, is, however, necessarily dependent upon the other two for its complete usefulness," it is apparent that if a well-balanced program is ever developed in which all of the various activities are coordinated, as they should be, then there must be closer relationship between the many organizations and agencies in order that the three services—education, prevention, treatment—may be more helpful each to the other.

ORGANIZING FOR SYSTEMATIC EFFORT

Since the American Conference on Hospital Service came into existence, I have felt, as have many others, that it offered great promise, possessed great possibilities, greater perhaps than its name signifies. It would be a gigantic task to develop a system whereby the various movements for the improvement and conservation of health might be cleared through a central clearing house; but such a task confronts us if we wish to accomplish the best results. Is it not possible that we have in this association the adoption of such a principle and the beginning of a movement which may lead to the gradual approach to systematic effort?

Such a suggestion does not mean that the American College of Surgeons should turn over its work on standardization, or that the American Medical Association should discontinue its work of standardizing medical education, or that the American Nurses' Association, the Social Hygiene Association, the Association for the Prevention of Infant Mortality, the American Public Health Association or the American Hospital Association should discontinue or turn over to this or any other organization the special problems on which they are working; but it is essential that there be more team work. Most of these organizations are working on problems peculiar to their own special fields, but many of them also inaugurate movements from time to time which have to do with a great public problem, in which we are all interested; and I maintain that there are now too many uncorrelated efforts for the settlement of these great questions of public health, and there must be greater cooperation and more intelligent direction of these movements if we are to emerge with a general program understood and backed by all.

No one organization can develop the entire program; many may contribute a part, but in the successful carrying out of a large constructive public policy we must finally rely on the backing of all the different elements of the medical profession. For example, with all of our associations, we have not yet been able to obtain that most desirable end, the creation of a national department of health. In my judgment the main reason for such failure is to be found in the fact that as a profession we have never really organized for the effort, and have never really sold the idea. Our attitude toward our local societies is an index of this shortsighted policy; at least it is true of the East. What does the average state or city medical society amount to so far as having any influence on the forming of public policy? It exists, for the most part, for the purpose of bringing the local profession together at regular intervals to listen to papers on some medical subjects. Are those societies a force in their communities for forming public opinion, for educating public officials, as to what is needed to make life safer and to conserve health? They are not. If they were, the city and state health departments, hospitals and other health agencies would not still be subject to the pernicious influence of the political spoils system. Such is the situation all too frequently; and instead of having qualified health administrators at the head of such institutions, we find men of little or no training for their particular jobs, installed and removed at the whim of mayors and governors, which, together with frequently changing administrations, makes it impossible to formulate any broad public health program. Why is it that it is so often necessary to raise private funds for the demonstration of movements which legitimately are functions of the city or state? The situation is familiar to us all. It is absurd, but whose fault is it? The public's? Not at all, for the public has not been educated or advised by those whose business it should be to advise. We have the machinery, why not use it; or are we content to continue the policy of "let George do it?" [1]

According to Haven Emerson:

> We are emerging from the era when the health officer was a lawyer, a policeman, a scavenger, a mere clerk, to the conception of the health officer as a leader in social organization, a student of disease as it occurs in groups, an administrator of services which make life more secure and happier in every household, in reality the family physician of the community, its trusted adviser and protector.
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> For those whom our education and our devices for prevention have been of no avail, the sick and injured of medical practice, the wastage resulting from our ineffectiveness in protection, we provide the physician, the visiting nurse, the dispensary, the hospital, the convalescent care. That there should be so much more needed to pay the cost of repair work than is thought sufficient to spend for prevention, is a commentary upon our intelligence, a sharp reminder of our wastefulness, of our undeveloped business acumen.

These are matters which are intimately associated with the effort to supply adequate medical service to a community; and unless the profession, a united profession, interests itself in their proper handling, how can we deal satisfactorily with the many other phases of the problem as a whole? We need better facilities for training men for public health work, and we need more men, but what inducement is there for men to enter this field under the present system? It is true that many do so, but it is an uncertain future under the present system, except in private or federal enterprises.

CLEVELAND HOSPITAL AND HEALTH SURVEY

But there are many other factors of importance. We have between 6,000 and 7,000 hospitals in the United States, and we have no basis of hospitalization. There exists no machinery for determining what the hospital needs of a community are, what types of hospitals are most needed or best, what organization furnishes the best results, or where hospitals should be located. Most hospitals have been created without any estimate as to the needs of the community as a whole. They are largely the result of the activities of special interests or groups of individuals whose aim was quite apart from a consideration of the community's needs as a whole. It is an unbusinesslike and shortsighted policy. Machinery is needed for determining the policy of hospitalization and for formulating standards on such points as are brought out in the Cleveland Survey, and the purpose and scope of this survey, as set forth in the report, may serve to emphasize the point which I

make, that a general policy, a standard of approach, a machinery of execution, must be provided if progress in the right direction, on the right lines, is to be made.

The following is the general outline laid down by the committee as the basis of the survey:

GENERAL OUTLINE

FOR HOSPITAL AND HEALTH SURVEY

Hospital and health activities have a common purpose.

It is better public health and fewer preventable deaths. There are four fundamental contributing factors to the efficient work of all hospital and health organizations working to this end.

These are:

Development of medical education, both postgraduate and undergraduate.
Development of nursing education, both general and special.
Advancement of public health and preventive medicine.
Care of the individual sick.

Due consideration must be given to each of these four factors in considering the work of any individual hospital or health organization or group of such organizations or community hospital or health needs.

The work of this committee may be divided into two parts:

I. A survey and study of the existing hospital and health activities—public or private—of Cleveland. It should determine the contribution which is now being made to the common end by the different institutions individually and collectively, discover ways in which these institutions may be made to contribute more by reasonable changes either in the division of labor with other institutions, the volume of work done or contemplated, or in the way of doing work. This involves a survey and study of:

1. Medical education in Cleveland as at present conducted.
   (a) Use of clinical material and facilities in Cleveland by the medical school for undergraduate instruction, for postgraduate instruction of young medical men, for instruction and development of the medical profession in general.
2. A study of nursing education as conducted at present in Cleveland.
   (a) Training schools giving general nursing education.
   (b) Facilities for providing nurses with special education and training.
3. The Division of Health of the City of Cleveland and its relation to the hospitals, dispensaries and other medical institutions and the profession in general. Its activities in the care of contagious diseases and in preventive medicine.
4. A study of the existing hospitals and their plans for extension to determine:
   (a) The available and contemplated facilities for:
      Pay or private room patients.
      Part-pay and ward patients.
      Free patients.
   (b) The probable normal needs of the community for each of these classes of accommodations.
5. A study to determine the present and contemplated facilities as well as the probable normal needs of the city for the care of certain classes of sick:
   Contagious, including venereal diseases.
   Acute surgical.
   Acute medical.
   Chronic surgical and orthopedic.
   Chronic medical.
   Convalescent:
      The immediate development of facilities for chronics and convalescent patients as a means of saving hospital space.
   Insane and mental diseases.
   Aged and infirm.
   Maternity.
   Babies and children.
   Accident and emergency.
6. Dispensaries. A study of their location as to their availability to all Cleveland citizens in need; the type of cases receiving treatment therein; the facilities of the various dispensaries to do properly the work undertaken.

II. The second part is a more extended study of the community to determine the ideal number, grouping, location, character and functions of the hospital, medical and health institutions which can best serve Cleveland at present and during the reasonable future development of the city. This entails:

1. Morbidity, accident and mortality rates for the city, as a whole, and by districts, based on city statistics, questionnaires to physicians, hospital and dispensary records, Industrial Commission reports, U. S. Census figures on occupations, races and ages, and morbidity census in other cities, perhaps house-to-house canvass of selected districts to learn amount of sickness, total and classified.
2. Care secured by the sick, economic ability to secure care. Home conditions affecting care. Knowledge or ignorance of existing facilities. Efforts of agencies to reach those needing their care. Constituencies of various hospitals or attraction of hospitals for various groups. Survey of adequacy of home care in typical neighborhoods.
3. Capacities and facilities of existing agencies for giving the amount of remedial care shown to be needed by studies of the amount and present care of all sickness, accidents, and by prospective increase of population.
4. The estimated reduction in sickness from extension of preventive medicine and health insurance, based on European experiences.
5. The medical school's relation to present and future hospitals, dispensaries sickness prevention and the health department.
6. The relation of nursing training schools to present and future hospitals, dispensaries, sickness prevention and the health department.

Therein we see a recognition of the importance of the questions involved and the comprehensive study necessary to the formulation of a definite constructive program. This work, undertaken at the instance of the Cleveland Hospital Council, should have far-reaching results. It is the most enlightened and far-sighted action yet undertaken in any community in the United States. It points the way for the guidance of other communities, and it is an example to all as to the kind of constructive effort, based on searching investigation of the factors involved, which must become more or less standard procedure. It is this sort of policy which we should stand for rather than the haphazard, unsystematic, unregulated growth which has prevailed heretofore. It is in the formulating of such policies that the American Conference on Hospital Service should be of great benefit to the country at large.

HOSPITALIZATION

We must realize that there are innumerable problems to be dealt with, for which standards of procedure are lacking. It is worth while to discuss some of them more specifically.

Hospital service has become very costly. Generally speaking, the support of our hospital system has developed according to the English system of voluntary support but with certain characteristic differences. We have relied on drives, tag days, large donations and bequests, and on state or city subsidy. The burden in the main falls on private funds. Neither the English nor the American method is entirely satisfactory. What is to be the future of our hospitals, as to support? It is a serious question. How far is it desirable or right that hospitals be supported by the city and state? How far would such a system of support make it necessary (it certainly would not be desirable) to turn over the management of all hospitals receiving such support to city and state authorities? Many states and cities now contribute to the support of corporate hospitals either by lump sum appropriations or on a per capita basis. In the one instance, appropriations vary not according to the work or merit of the institution, but according to the influence or pull which can be brought to bear on those controlling the appropriations. On the other hand, when the per capita basis is used, and it is the proper basis, the per capita allowance is usually about a half or a third of the actual cost. The whole system is an unbusinesslike, illogical method of dealing with a problem vital to the community. Some more adequate and more assured method of providing financial support for hospitals must be found, else hospitalization will fall far short of what the community needs. The medical profession is vitally interested because it affects not only beneficiaries of hospitals but also medical education, public health organization, nursing education and the public at large.

Are we to go on with our present methods of hospitalization, or shall we determine what is needed to strengthen the present system and attempt to supply the deficiencies? There are points to be considered.

For example, the hospital is now looked on as an essential public service institution. It is the place of first resort in sickness or injury of any very acute or serious nature. The hospitals provide for the poor and the well-to-do, but make no special provision for that large class of persons of moderate means who do not want charity, but who can neither afford the expensive private service nor bring themselves to accept the conditions of the charity ward. They suffer in every way, not only by the lack of provision in the hospital, but by the development of the present-day methods of practice. This is an age of specialization. There is evidence to support the charge of overspecialization. There is too great a tendency to relegate the general

practitioner to the background. To get a competent opinion, it is very frequently considered necessary to obtain the opinion of one or more (usually more) specialists. The expense of such service is too great for the poor and the people of moderate means. As a result, they are forced into hospitals or must be content with the services of men of limited ability, often due to limited opportunity. In this connection it is important to remember that 75 or 80 per cent. of sickness is cared for in the home. What is the remedy —for a remedy must be found if adequate medical service is to be provided? One thing is certain: The hospitals should be adapted to all classes. Possibly some hospitals should be entirely for people of moderate means. How can private practice be so adapted? By the group system? Possibly; but not as the group system is now generally operated. One method of supplying the advantages of the group system which must be more generally adopted is that of the diagnostic clinic for people of moderate means. This should be organized and operated in much the same manner as the free dispensary. How far it should go with treatment remains to be seen. But it should afford opportunity for persons able to pay a moderate fee for a diagnosis, where they may present themselves and, for an inclusive fee, obtain the attention of such specialists as are necessary, in order to arrive at a diagnosis and advice as to treatment. Generally speaking, these applicants should bring a note from their physicians or, better still, be accompanied by their physicians, who should be privileged to watch and have explained to them the various steps, and finally they should be given advice as to how to proceed in the further treatment of the case. Such clinics will not only serve this class of society now neglected, but will also prove an invaluable method of contact between the average physician and well-trained experts, which will serve to keep the average physician informed as to the most approved and correct methods of diagnosis. This would be postgraduate training on a scale worth while. Only a few of these diagnostic clinics would be needed in even a large community, and can be organized with entirely competent, younger men, who should receive modest salaries which, together with the opportunity, would make such service well worth while. At the same time this clinic could be made self-supporting.

The dispensary, however, should be both for diagnosis and for treatment. Its methods have been too slipshod; but, if properly organized and managed, it should be and can be one of the most important health agencies in the community. It is likewise a very important factor as a field for teaching medicine.

In dealing with the need of reform in hospitalization, one of the most important problems is how to provide adequate medical service to the rural community, now too frequently without either physician or hospital. Is every little struggling hamlet to improvise something in the way of a hospital, or must the county or the state provide such facilities? If the hospital is provided, where is the medical or surgical talent to be obtained? Must the rural population still depend on the hospital of the city, often too remote for emergencies, or is the traveling clinic to be relied on? It is a vitally important question to the rural sections, which until now have been almost entirely neglected.

The solution has been attempted in various ways. One method has been the establishment of small hospitals to which weekly or biweekly visits are made by physicians and surgeons of skill from the larger centers. Some states have established large central state hospitals where people from all over the state may be sent at the expense of the individual, the town, the county or the state. In some places a district of the state has organized for the support of a hospital and health center. An excellent example of this is to be found in Creston, Iowa. One is at once struck with the fact, however, that in this particular instance its success has depended largely on the enthusiasm, the force and the capacity for common sense organization of one individual. These schemes are successful in varying degrees. Obviously the answer has not yet been found.

Reference has been made to the fact that 75 or 80 per cent. of sickness is cared for in the homes. Much of this work is done by medical men who have no hospital connection whatever. No one will deny that one of the most important factors in the development of leaders in medicine and surgery is and always has been the hospital service with its large opportunity for experience and its facilities for complicated work of all kinds. I have no sympathy with the point of view of the man who is prone to dwell on the service which he has done the hospital, for rarely has he given more than he has received. What is to be done for the average man cut off from hospital privileges? For it is contrary to all principles of good organization and good management to open the doors of the hospital to any and every physician in the community, if it is a large community.

It is obvious that something should be done for him, and may it not be possible and worth while to establish clinics for the profession, clinics as carefully worked up and as competently given, in order to supply the information and stimulus needed by the average man, as when given to the student in school?

It would seem to be a short-sighted policy to continue to spend millions for the benefit of the young men learning to become physicians and to pay no attention to them after graduation, with no provision for continuing the education of the average man whose opportunities are limited and who is bound to fall behind unless some means are found to keep him abreast of the times. Some, of course, would have to be spoonfed; but the majority would eagerly seize upon the opportunity of keeping fresh and up to the times were that opportunity presented. Are we not overlooking an important factor by continuing to neglect this large element of the profession, probably as large as 50 per cent.?

While alluding to the subject of medical education, may a mere medical administrator venture an opinion that overspecialization is tending to fill the curriculum of the average medical school with too many specialized courses. The result is that the student is crammed with facts and theories by enthusiastic specialists in this and that field to the extent that he cannot absorb it all, let alone correlate it and assign to it the proper value which it should bear to the whole subject. It would seem that it might be well to revert somewhat to a system which guarantees a more thorough grounding in general principles. The man who has acquired a thorough knowledge of the general, fundamental, accepted principles, and the ability to reason from them, is a much better trained man than he who has acquired a smattering of alleged facts relating to every phase of medicine and its special branches. Furthermore, another result of the present system is that men are trained to rely more and more on the laboratory findings and the mechanical tests, and less and less on careful, painstaking

histories, inspection, thorough physical examination, the ability to reason from accepted principles and thus to arrive at a diagnosis. It goes without question that laboratory findings and mechanical tests are essential aids; but they should not supplant but merely supplement the older principle of careful physical diagnosis based on the findings of personal examination and clear thinking. Hospital experience should broaden a man's vision and ability, not render him less self-reliant and less capable of meeting situations, wherein he must rely chiefly on his mental equipment and acquired technic.

In the average hospital the intern or resident is left too much to his own devices, to pick up what he can as an underling dancing attendance on his busy chiefs, who hurry through the hospital with little thought of any responsibility for giving any time to directing along proper lines the training of these young men, who should be receiving the finishing touches to their professional equipment.

In the various efforts at standardization of hospitals, much good has been accomplished. One result has been the preparation of a list of hospitals acceptable for internship. But it is useful in the main in that it indicates a list of hospitals, the scope of whose work and the equipment of which make them acceptable, as possessing adequate facilities. But it does not take into consideration sufficiently the other question which is equally important, namely, whether or not any effort is made to instruct and train the intern, or whether the example of the visiting staff is good or bad. The list is excellent so far as it goes, and it serves a good purpose; but it is far from perfect or even accurate, and this effort can go farther and insure better results.

Among other efforts at standardization is that of the American College of Surgeons, the result of which has been the adoption of a minimum standard which has undoubtedly accomplished a great deal of good; in fact, it has done more in a short time to raise the standard of hospitals in general than any other movement. There is much still to be done, however.

There are innumerable systems of organization and management. Undoubtedly there must be some variation to suit local conditions, but not the wide variation at present. There must be a choice between the divided, rotating service for the visiting staff, the continuous service, and the open door policy. They are not all of equal merit: at least that is the consensus; yet we go on forming these various organizations with all sorts of modifications.

We still find appointments made because of social prestige, political influence or clique feuds, ignoring real merit and to the detriment of the service to the public. Is there any way of correcting this evil other than by education to a better standard of professional ethics, and the education of trustees? We see men of slipshod methods and actual incompetence continue to hold important and coveted hospital positions to the exclusion of others much more competent with no effort by their colleagues to call them to account or to bring about their removal, except occasionally as the result of factional fights. Is this sound professional ethics, is it in the interest of the public service?

THE HOSPITAL ADMINISTRATOR

The one medical man in the organization whom no one hesitates to attack in public and in private, whom there is no hesitation in removing whenever the staff thinks it desirable to do so, is the medical director or superintendent. Wherein lies the difference? He may deserve removal, but why not the same ready treatment for offending clinicians? There is a principle involved in such a system which is not sound and cannot be justified.

It is high time that we become alive to the importance of this point, for the status of the administrator must be clearly understood and acknowledged, else we shall have no administrator worthy the name. Hospital administration is a specialty and an important one in our scheme of hospital development. Few clinicians have any conception of the load which he carries, in making the hospital most effective in its service to the community. In a few places his position is one of dignity and his status unquestioned and entirely satisfactory; but in most places this is far from the case, and he is as popular as the umpire at a ball game, and his life about as safe. I speak feelingly on the subject because I have seen too many of my colleagues harassed and made miserable by the members of the staff or of the trustees or both. I am not referring to instances in which such treatment was warranted, but to instances in which it was contrary to all principles of fair play. I dwell on this as one of the factors which is responsible for the difficulty in attracting first class medical men, nurses or laymen into administrative work.

A year ago the Rockefeller Foundation called a conference of administrators, clinicians and medical teachers to discuss the question of the training of hospital administrators. It was a very gratifying experience to hear such expressions as the following:

DR. RAY LYMAN WILBUR, President, Leland Stanford Junior University: The great problem is to develop medical men with inborn administrative capacity, so that they can run a hospital and make the conditions the most favorable for the patients, the physician and for the advancement of medical knowledge. There are two general problems involved: first, the development of high grade administrators with a medical education who can serve as the leaders in medical education and public health.

DR. HAVEN EMERSON: The hospital is now accepted as a public service institution; and the hospital superintendent is a most important agent in public health protection and in education in public health matters.

DR. DAVID EDSALL, Dean, Medical School of Harvard University: I, too, have felt that one of the most important things is to adopt means of getting the right kind of men into this work, and I quite agree that medical schools have been in some degree at fault in this. . . . The hospital administrator in hospitals connected with medical schools is of extreme importance in the proper development of medical education and medical research; in other words, he is of very great importance to the future of medicine, for he can do as much as any one in the whole system to further or to block developments in the clinical branches especially. I thoroughly sympathize with Dr. Emerson's suggestion that these men should be trained in the important principles of general public health, as they have, all told, most important opportunities to further general public health. It is likewise important that they be trained in relation to a medical school so that they may likewise comprehend the needs of medical education, and medical research can be coordinated. When suited for it, their positions in relation to any of these activitis should be dignified, and opportunity should be given to them to be influential in the whole public health movement, in medical education and in furthering the progress of medical knowledge.

A committee was finally appointed by the foundation to study the question and report with recommendations. It is to be hoped that much good may come of this study.

There is hope that the lot of the administrator, lay or medical, may be made more attractive. In the judg-

ment of many it is important to the successful development of our larger hospitals, teaching hospitals in particular, that medical men of the best type and ability should enter this field. But if such men are to be obtained, it must be made more attractive as a career, it must be recognized as a career more generally by the profession, and it must be held up as a career by our teachers in schools of medicine, a career fully as attractive, fully as important and equally remunerative as any other branch of public health work.

LIMITATIONS OF STANDARDIZATION

The term standardization is much used these days and it is much abused. It has a perfectly proper significance, and is a perfectly good term, but it is used much too loosely in connection with many functions which cannot and should not be standardized. We may set standards which a hospital or medical school should meet. We may even set a standard of conduct, if necessary, as to the number of hours a visiting physician should spend at the hospital, or the number of lectures which the professor should deliver in a given course; but we must be sane about it. It is one thing to set up a standard of equipment and of administrative procedure in general, but it is quite another thing to fix a standard of professional procedure or technic, a standard of professional responsibility or a standard of diagnosis and treatment. In an article entitled "The University Brickyard," by Grant Showerman, appears the statement: "It may be disappointing and it may be inconvenient, but there is no such thing as a brick or a unit hour in education. The only unit in the intellectual life is the man. In the determination and the evaluation of that unit, the use of the steelyard, the straight edge, the two foot rule and the framed square is not only futile, but pernicious. The colleague, the department chairman, the dean, the president, the board member who is unable to measure men without the employment of these tools of other trades or who does not possess the courage to act without falsely flourishing them as a means of justification has not yet found his place of least uselessness." There is much truth in that statement.

Given a physician or a surgeon with a due sense of the responsibility of his position, of duty to his service, of honor, fair dealing and self-respect, and measurement by such tools is unnecessary and pernicious. If he has not those qualities, standardizing will not improve him sufficiently. Standardization is all right in its place, but it should not be too loosely or carelessly applied. I refer to standardization in this way, not to disparage legitimate efforts in the proper place, but to point out the chances of being carried away with an idea which may not take into consideration the fact that there are legitimate variations in human behavior, in methods of approaching and of handling a problem, and that individual initiative allowed to develop in its own way has been responsible for much that is best in every phase of activity.

NURSING

Returning for a moment to the consideration of specific problems, I wish to say a word about nursing, using the term inclusively. The rapid development of nursing as a profession to its present status, a development in step with the development of medicine, and in response to its demands, should be a matter of pride to all medical men. It is a development essential to the practice of modern medicine, surgery and public health. As medical men we have not much to be proud of in the manner in which we have dealt with the movement; out efforts cannot be said to have been constructively of very much asssistance. The credit is due almost solely to the nurses themselves.

That reforms may be indicated, that errors have been made, that improvements can be made, I have no doubt; the same has been true of the medical profession; but that a solution will be found and that the leaders of the nursing profession will still play a major part in finding that solution, I have no doubt. There are many who believe in high standards of nursing education, of whom I am one, but we do not necessarily think that changing conditions and new demands should not bring about modifications or supplementary procedures.

There are many, other than nurses, who believe firmly that the standards for the education and training of the expert trained nurse should be maintained, indeed raised in many states, and they believe that this is in the interest of the medical profession, of the hospitals and of the public; but they also believe that the changed conditions, the growth of the public health movement and the public demand, make it necessary to consider as soon as possible the trainiing of a group of women who will supplement the trained nurse, a group of women called practical nurses or attendants or by some suitable term, who can be trained in a much shorter time and in larger numbers to perform the simpler tasks in caring for the sick and to act as aids in the carrying out of the public health program.

In brief, we believe that training schools for nurses should be safeguarded, that they should be considered as educational departments in the hospital rather than purely utilitarian, that the hospital organization should be so constructed as to relieve the nurses of much of the purely utilitarian work in order that their time may be devoted more to actual nursing, to the end that the course of training may be shortened to two years or two years and four months, and the balance of the three year period be devoted to training in public health nursing or other special fields, by those who elect such training. We believe that this will attract more young women to the schools, although it must be borne in mind that there are now more pupil nurses in training that at any previous time, loose statements to the contrary notwithstanding.

We believe that it is imperative that due consideration be given the training of this attendant or practical nurse class, providing a course of from six to nine months in appropriate institutions, in order that a much larger group of women than is now provided by the trained nurses may be available for the simpler procedures, and in order to release the trained nurse for the more expert service for which she is needed and thus, by training these two classes, supply to the public the much larger number of women required for the care of the sick and the prevention of sickness. It is generally conceded, however, that before steps are taken to turn large numbers of this class into the field, regulatory measures must be adopted which will make it necessary for these women to practice under the appropriate designation and render it as nearly impossible as can be done for them to swindle the public by posing as something which they are not. The inauguration of this movement, unless safeguarded by such legislation, and unless receiving the cooperative backing of the medical profession, will be followed by disastrous consequences and the destruction of the nursing profession, results which the medical profession cannot afford to contemplate.

We also believe that the time has come for the establishment of definite training centers and definite courses for training in public health nursing, and that this is one of the most urgent problems.

Here are matters of concern to us all and worthy of the most careful thought in the formulation of a policy which shall preserve all that is good and supplement that which is lacking, in dealing with the whole problem of nursing throughout the United States.

THE CONVALESCENT AND THE PHYSICALLY HANDICAPPED

One more topic and I am through. There is one phase of providing adequate medical service to the community which has been almost entirely overlooked, and yet is of the utmost importance to any system of thoroughness. I refer to the necessity of provision for the convalescent and the physically handicapped.

Scarcely any large city, no matter how well supplied with hospital beds, has anything like adequate facilities for handling convalescents. They are discharged in large numbers daily, in order to make room for the acutely ill, many of them in no condition to care for themselves and with no place to which to go where they can receive proper attention. Not only is this provision necessary, but it can and should be provided as the logical extension of our hospital system. With proper convalescent hospitals, the turnover in the main plants would be much more rapid and the results more satisfactory, both professionally and economically. It should be a definite part of the hospitalization program of a city, to supplement and extend its expensive, fireproof city hospitals by the erection of less expensive, less elaborate, better adapted convalescent branches or centers in the suburbs or country.

The physically handicapped present another problem, but one definitely associated with that of adequate hospital service. We continue to discharge from our hospitals every day thousands who are suffering from some form of permanent physical handicap, and we give them advice which they cannot or have not the intelligence to follow, with the result that they often return again and again for the same treatment for the same condition, or else after a while sink into lives of invalidism or dependence. On the other hand, if the proper machinery existed, they could be saved as useful members of society. Just what the machinery should be I do not pretend to say; but it should at least provide for placement in suitable employment, for that is all that is needed in many cases, and for reeducation either in training institutions or in selected industrial plants, for those whose condition prohibits return to the old employment. This is not the problem of any one hospital: it is the problem of *all* hospitals, and it therefore becomes a community problem.

If hospital service is to be made thoroughly and finally effective, the machinery or organization for taking the physically handicapped as they leave the hospital and carrying them to the point of final adjustment must be supplied. It is now, one may say, entirely lacking, although some feeble efforts are being made, but too often without adequate backing and without sufficient vision.

It was expected that the federal government would point the way in dealing with the crippled soldier, but that expectation has not been fulfilled. It is not a new problem resulting from the war, for the number of physically handicapped and disabled, products each year of modern industry and modern life, is larger than the number resulting from the war. It is a problem worthy of careful study by this conference.

NEED OF CONSTRUCTIVE COOPERATIVE EFFORT

These are some of the factors which are of importance in developing adequate medical service for a community. We are all, physicians, surgeons, educators and administrators, directly concerned in seeing that these problems are satisfactorily handled, for the success of any one factor in the whole program is affected for good or ill as the other factors are dealt with successfully or unsuccessfully. Are we to continue the haphazard policy of dealing with this problem by one organization, that problem by another, this city copying what has been found fairly successful in that city; or is it worth while to try through some method to visualize the whole problem and to deal with the different phases by assignment or by common consent, through the various organizations now existing, or to be created as needed, but according to a constructive, inclusive, coordinated program? The promptness and efficiency with which such a program is developed will influence, if not control, the extent to which state medicine, health insurance and similar movements are to develop with whatever the effects might be on private practice, its development and its independence. It is inevitable that state medicine and similar movements will prevail unless the medical profession, through its own initiative, finds a better way of supplying adequate medical service. Possibly they should prevail, but at least it is advisable that the medical profession understand the trend.

Are the best results to be obtained by continuing our present methods, or is it possible that better results can be obtained by a pooling of individual efforts in the formation of some central agency? Is the American Conference on Hospital Service possibly a step in that direction, and is it likely to function efficiently as now constituted? I believe there are great possibilities in this hospital conference as a clearing house, a unifying or directing organization. But I do not believe that a conference composed of delegates from some twelve or fifteen organizations which meets periodically merely to discuss the different problems, helpful as that may be, will accomplish all that could be expected, unless the constituent organizations recognize the conference as a clearing house and instruct their delegates definitely to present questions to be decided in the interest of common policy, and are prepared to accept, within reason, the assignments and decisions of the conference, as to standards, as to problems to be studied, and as to the selection of the organizations to study them. It seems to me that this is one thing much needed right now to make the American Conference on Hospital Service effective for dealing with the many questions in which we are all so vitally concerned.

I refer to the conference in this connection not as antagonistic to other associations in any way, not as supplanting them in any field, but, on the contrary, as an organization representing these other associations in regard to common interests, in large matters of public policy, for the purpose of establishing more effective machinery for dealing with such problems. It should be looked on as a cooperative, not an independent, enterprise. It was not my intention to present a long list of matters to be taken up at once by this conference, but rather to call attention to some of the more important questions in order to demonstrate the need of cooperative effort in constructive planning. Many

matters of importance have not even been referred to. Some of the matters mentioned are already receiving attention, others doubtless this conference may wish to consider; but I suggest that for the coming year one of the most important studies which the conference could undertake would be the development of a constructive program for the pooling of interests and unification of efforts for the handling of these and the many other problems relating to medical service in general.

ALCOHOL AND SYPHILIS AS CAUSES OF MENTAL DISEASE *

GEORGE H. KIRBY, M.D.
Director, New York State Psychiatric Institute; Professor of Psychiatry, Cornell University Medical College
NEW YORK

Alcohol and syphilis have long occupied a position of special prominence among the known causes of mental disease. In modern psychiatric literature, they have been universally recognized as two of the chief causes of mental disorder; not infrequently they have been described as the only causes known to be definitely and specifically responsible for any considerable number of psychoses.

Many observers have been inclined to see a certain interrelation between alcohol and syphilis as causes of mental disease: use of the former perhaps tending to increase the chances of infection and subsequent inebriety, through a lowering of resistance, general or local, predisposing to invasion of the central nervous system by the syphilitic organism. Such a relationship would be difficult to establish and could hardly amount to anything more than a general tendency or contributory influence among other determining factors. However, Kraepelin and others have pointed out that syphilis runs an especially severe course in alcoholic persons, and that among certain peoples, for instance, the abstemious Oriental Mohammedan groups, paresis is very rare, although syphilis is widely prevalent.

In recent years, there has been general acceptance of the statement, based on statistics published by American and European observers, that alcohol and syphilis together were undoubtedly the cause of from one fifth to one fourth of all cases of mental disease that required hospital care and treatment. Among male patients admitted to psychiatric hospitals the proportion given was much higher, one fourth to one third being attributed to alcohol and syphilis. It is of interest to note that a few years ago there was a fairly close agreement of figures showing the combined proportion of alcoholic and syphilitic psychoses (paresis) found in various mental hospitals among first admissions. The following are given as representative ratios: New York state hospitals (1911), 23.7 per cent.; Massachusetts state hospitals (1911), 21.1 per cent.; Munich Psychiatric Clinic (1909), 25.2 per cent.

As regards syphilis, the etiologic relationship to mental disease has come to be accepted as a simple and direct one. Since the discovery of *Spirochaeta pallida* and its demonstration in the central nervous system, it has been known that syphilis of the brain and of the membranes accounted for paresis and other syphilitic psychoses.

In respect to alcohol, on the other hand, there has always been a divsion of opinion as to its real etiologic significance, with a tendency on the part of many psychiatrists to place most emphasis on its rôle as a secondary or contributory factor, if, indeed, alcoholism could be regarded in many psychoses as anything more than a symptomatic manifestation of an underlying mental condition or psychopathic constitution. Be that as it may, and I do not intend to discuss the causes of inebriety itself, there can be no denial of the fact that in a large group of mental disorders alcohol figures as an essential causative agent; it brings about the mental breakdown, and without its influence certain types of psychosis would not develop.

The special questions which I shall discuss arise from the fact that during the last decade or more there have been certain developments in medical science and in our social life which, in all probability, must exercise a great influence on the prevalence and potency of these two outstanding causes of mental disease. Certain results are already in evidence, and it is to these that I shall draw particular attention. This will require a brief survey of the present rate of incidence of alcoholic and syphilitic psychoses with a consideration of data showing what has been happening during the last decade in respect to the occurrence of these disorders.[1]

RATE OF INCIDENCE OF ALCOHOLIC PSYCHOSES

First as to alcohol, there can be little doubt that during the last fifteen years or more there has been a general reaction against the intemperate use of alcohol. The habits and social customs of people have appreciably changed, while a gradual shifting of public sentiment in respect to drinking has taken place. This new attitude has been concretely expressed by an ever-increasing application of local option, passage of statewide restrictive laws, and finally a culmination is seen in the adoption of the prohibition amendment to the federal constitution. It is not within the scope of this communication to discuss the factors underlying this movement, which apparently finds no parallel in the annals of history. A development, leading to the overthrow of established social customs of such great antiquity, must have roots deep in the emotional life of a large body of the people and is probably linked up with subconscious determinants which are at most only vaguely appreciated. These are undoubtedly reinforced by various other trends apparent in modern American life, for example, the higher industrial standards set by corporations and other employers of labor, and a greater interest on the part of the public in health and social welfare problems generally.

From the standpoint of medical data, one of the most striking illustrations of this trend against inebriety is revealed by a study, over a series of years, of the admissions to Bellevue Hospital in New York City. The figures relating to Bellevue, I have been able to gather through the courtesy of Drs. M. S. Gregory and George O'Hanlon.

Table 1 shows the percentage distribution by years of 77,334 cases of alcoholism (exclusive of psychoses) treated in the Bellevue alcoholic wards. The comparison is made with the total number of patients treated annually in Bellevue Hospital exclusive of cases of accident and injury. The period covered is twelve years.

* Read in abbreviated form before the New York Neurological Society, Jan. 4, 1921.

1. The system inaugurated in 1908, whereby uniform statistics are collected in all of the New York state hospitals, has made possible the analyses on which this study is based. The writer desires to express his appreciation of the assistance given by Dr. Horatio M. Pollock, statistician of the state hospital commission.

This table shows a remarkable fall from the high point of 1910, when 31.7 per cent. of all cases passing through Bellevue Hospital were diagnosed as "alcoholism," to the low point in 1920, when only 5.8 per cent. were so diagnosed. The actual number of alcoholic cases in 1910 was 10,691, whereas in 1920 the number had declined to 2,001, the lowest on record.

The continuous decrease in the ratio of alcoholic cases is all the more significant when we take into consideration the fact that the population of New York City has been steadily increasing and that there has been apparently no important shifting of alcoholics to other hospitals or institutions for treatment.

The main points of interest contained in Table 1 are graphically represented in Chart 1. The slight upward

TABLE 1.—NUMBER AND PERCENTAGE OF CASES OF ALCOHOLISM AMONG TOTAL NUMBER OF PATIENTS TREATED AT BELLEVUE HOSPITAL

	Total No. of Patients Treated in Bellevue Hospital*	Number of Cases of Alcoholism†	Per Cent. of Alcoholism
1909	35,296	9,007	27.3
1910	33,677	10,691	31.7
1911	30,151	8,348	27.7
1912	32,541	8,059	24.8
1913	32,719	7,722	23.6
1914	34,073	6,889	20.1
1915	43,111	6,157	14.3
1916	40,582	7,055	17.5
1917	40,695	5,949	14.4
1918	37,222	2,525	6.7
1919	33,896	2,469	7.3
1920	34,034	2,001	5.9
Total	427,809	77,334	

* Exclusive of traumatisms.
† Cases diagnosed acute and chronic alcoholism, the definite alcoholic psychoses, are not included.

turn of the curve in 1919 is due to a relative increase of cases of alcoholism, the result of a falling off of the total general admissions to Bellevue Hospital. As a matter of fact, the actual number of alcoholics in 1919, as shown in Table 1, was less than in the preceding year, and the number for 1920 is the lowest yet reached.

A point of interest in the Bellevue curve is the noticeable rise in 1916. This will be referred to later

Chart 1.—Annual percentage of cases diagnosed as alcoholism among total patients treated at Bellevue Hospital.

in connection with a corresponding rise and fall noted in the curve for the alcoholic psychoses, the next group to be discussed.

The data collected regarding the rate of incidence of alcoholic mental disturbances are given in Table 2, which shows the percentage distribution by years of the cases of alcoholic psychoses admitted to all of the New York State hospitals, comprising thirteen institutions located in various parts of the state. The period covered is twelve years. Five thousand, three hundred and seventeen cases of alcoholic psychoses were admitted during this time. The state hospital year ends June 30, so that when we refer, for instance, to the year 1920, we mean the hospital year ending June

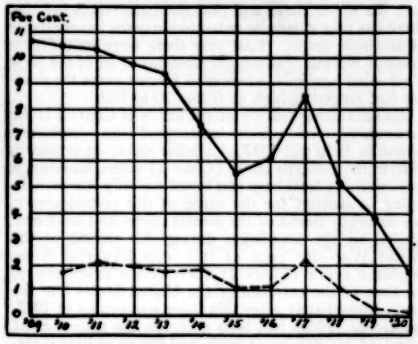

Chart 2.—Annual percentage of alcoholic psychoses among first admissions to New York state hospitals: solid line, total alcoholic psychoses; broken line, Korsakoff's psychosis.

30, 1920. In this table, comparison is made with the total annual first admissions to the state hospitals. The accuracy and significance of these data are enhanced by the fact that the figures include only *first* admissions, represent persons and not cases, which means that no

TABLE 2.—NUMBER AND PERCENTAGE OF ALCOHOLIC PSYCHOSES AMONG FIRST ADMISSIONS IN NEW YORK STATE HOSPITALS

Year	Total First Admissions	Alcoholic Psychoses	Per Cent. of Alcoholic Psychoses
1909	5,222	561	10.7
1910	5,564	583	10.5
1911	5,700	591	10.4
1912	5,742	565	9.8
1913	6,061	572	9.4
1914	6,393	464	7.4
1915	6,394	345	5.6
1916	4,505*	297*	6.1
1917	6,827	504	8.6
1918	6,797	354	5.7
1919	6,791	269	3.9
1920	6,573	122	1.8
Totals	72,609	5,317	

* Figures for a period of nine months only, owing to change in hospital year.

person has been counted twice. By thus eliminating readmissions we get as accurate a record as possible of the number of fresh psychoses developing each year in the community.

In Chart 2, the upper curve shows graphically the ratios contained in Table 2. The chief characteristic of this psychotic group is a marked decline from the high point in 1909, when 10.7 per cent. of all cases admitted to state hospitals were diagnosed alcoholic psychoses, to the low point in 1920, when 1.8 per cent. of the admissions were placed in the alcoholic group. The actual number of cases of alcoholic psychosis admitted in 1909 was 561, whereas in 1920, the number had declined to 122, the lowest on record.

The thought that the diminishing number of cases of alcoholic psychosis reported by the hospitals might

be accounted for in part by a change of diagnostic attitude prompted us to plot separately a curve for the Korsakoff cases, because in that type, with its characteristic physical and mental picture, the margin of diagnostic error would certainly be reduced to a minimum. The lower curve in Chart 2 shows the declining rate of the Korsakoff cases. It follows in a remarkable way the upper curve and thus confirms our belief that there has been a definite reduction in cases incontestably of alcoholic origin. Last year there were only fifteen cases of Korsakoff psychosis admitted to all of the New York state hospitals, whereas in former years the number had ranged as high as from 120 to 160.

An interesting feature of the curve in Chart 2 is the pronounced rise which interrupted the downward course in 1916 and 1917. A similar elevation is seen in 1916 in the Bellevue curve (Chart 1) when, however, it was relatively less sharp and lasted for only one year. In trying to account for the cause of this recrudescence, one naturally thinks of the mental unrest and emotional tension of the population during this period of the World War—the peak of this secondary rise in the psychotic curve (Chart 2) corresponds practically to the time of the entrance of the United States into the war. Immediately after this issue was settled in 1917, the decline, which had been going on for a number of years before 1915, set in again and has since been maintained. Other factors, such as the general economic situation, the prosperity of the working classes, interruption of immigration, and later on the draft, might also be thought of as modifying influences during this period when the curve rose and again fell. It is worth while noting that the reduction in the number of cases of alcoholic psychosis has been proportionately as great among women as among men.

In several European countries, a reduction in alcoholic insanity has been reported during recent years and has been generally attributed to the scarcity of alcohol during the war. Kraepelin has recently published some interesting figures regarding admissions to the Munich Psychiatric Clinic.[2] These show a decline of alcoholic psychoses from 15 per cent. in 1914 to 3 per cent. in 1919. In 1910 there were 300 cases of alcoholic psychosis admitted to the clinic, whereas in 1919 the number had fallen to forty-three. Kraepelin thinks the result, in Munich at least, is due almost entirely to the war necessity of reducing the amount of alcohol in beer, as the drinking of whisky has never been an important factor in the Bavarian capital.

From the consideration of the data available regarding the prevalence of alcoholism and the occurrence of alcoholic insanity, it is evident that during the last ten years there has been a marked decline in the intemperate use of alcohol and a corresponding fall in the rate of incidence of alcoholic psychoses. Analysis of the carefully collected statistics from the New York state hospitals reveals that alcoholic insanity has decreased from nearly 11 per cent. of the total admissions in 1909 to less than 2 per cent. in 1920. It will be noticed by referring to Table 2 that a consistent annual decrease had set in before the war and long before any nation-wide restrictive measures became operative. Since 1917, however, the decline has been accelerated and the present low figure which now obtains is no doubt due in part to war conditions and national prohibition.

The occasional published sensational statements that alcoholism has been increased by prohibition have no basis in fact. Some fluctuation in the number of cases admitted to alcoholic wards in the large cities has occurred during recent months, but such increases as have been reported may be regarded as temporary recrudescences which, however, fail by a wide margin to reach the figures of former years. The indications are that prohibition will result in a still further reduction of the number of cases of alcoholism and alcoholic psychosis.

We have seen no signs that other psychotic types are appearing as substitutes for alcoholic mental disturbance. The total admissions to the state hospitals have diminished in the last few years, as shown by Table 2, which is probably due in large part to the falling off of alcoholic psychoses. There has been no increase of drug psychoses; in fact, the number of cases admitted to the New York state hospitals has decreased, although these patients have always formed a relatively small group among the admissions to the state hospitals—only those cases with a definite drug psychosis being received for treatment.

FREQUENCY OF SYPHILITIC PSYCHOSES AND THE INCIDENCE OF THESE MENTAL DISORDERS

I shall now consider briefly the data relating to the frequency of syphilitic psychoses and discuss some of the factors which may affect the incidence of these mental disorders.

It is evident that during the last ten or fifteen years a number of forces and influences have come into play, which may possibly lower the rate of incidence of syphilis as a disease, or modify its course and later manifestations, especially the neuropsychotic forms with which we are here particularly concerned.

Long before the development of present methods of treating syphilis, various observers had expressed the view that a certain change was taking place in the clinical manifestations of syphilis and in the predilection of the disease for certain organs or tissues. Attention was called to a diminished frequency of severe or destructive skin and bone lesions. Oppenheim and others noted an apparent increasing frequency of syphilis of the nervous system and suggested that this was concomitant with a lessening of attack on other body tissues.

On the other hand, we have for consideration another set of facts: During recent years the public has acquired more information about syphilis, its prevention, recognition and treatment, than it ever had before. Syphilis can be diagnosed sooner and with more certainty than formerly; it can be detected in its latent stages and an invasion of the central nervous system can be determined earlier than was possible before the present methods were developed. Furthermore, the therapy of syphilis has been revolutionized since the introduction of arsphenamin in 1910, and immensely better facilities both public and private have been provided for the treatment of the disease. Finally, the decrease in alcoholism may have entered as a factor, tending to diminish chances of infection and removing a possible contributory cause in the development of late nervous or psychotic manifestations.

Have these various influences and newer modes of treatment exercised any appreciable effect on the number of cases of neurosyphilis? It may be too soon to expect to see any results, especially from treatment, as neurosyphilitic lesions are not usually brought to attention until from five to fifteen years or longer after the initial infection. Unfortunately, very few facts can be

2. Kraepelin: München. med. Wchnschr. 67:1235 (Oct. 22) 1920.

obtained from the case records of general hospitals or venereal disease clinics on which to base an answer to the foregoing question. Practically the only data available for study at the present time pertain to the neurosyphilitic cases, particularly the cases of paresis, admitted to the state hospitals.

Table 3 shows the percentage distribution by years of the cases of paresis admitted for the first time to the New York state hospitals. The comparison is made with the total annual first admissions to the state hospitals. The period covered is twelve years, and the number of cases of paresis admitted during this time was 9,100.

The percentage ratios indicate a marked uniformity of the admission rate for paresis—the fluctuations are within narrow limits, a little above or a little below 13 per cent. This is shown graphically by the upper curve in Chart 3. It will be seen, however, that a slight fall has occurred during the last two years from the relatively high point of 13.4 per cent. in 1918 to 12.5 per cent. in 1920. I am inclined to attach some significance

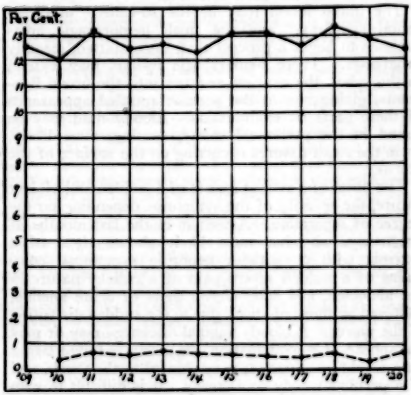

Chart 3.—Annual percentage of paresis and cerebral syphilis among first admissions to New York state hospitals: solid line, general paresis; broken line, cerebral syphilis.

to this indicated decline especially when the recent census figures are utilized and the rate of paresis per hundred thousand of the general population is computed. This computation gives, according to statisticians, a truer index of the incidence of a disease than does a ratio based on percentage of admissions.

Reference to Table 4 shows that the rate for paresis per hundred thousand of the population of New York State was quite uniform, with, however, a slight upward tendency from 1913 to 1917; in 1918, a high rate was reached, the highest on record. Since then, however, there has been a decline, so that in 1920 we have a lower rate for paresis than at any time in the last eight years. Moreover, by referring to Table 3 we find that the actual number of cases of paresis admitted to the hospitals in 1920 was less than in 1919, considerably less than in 1918, and also smaller than in 1917. This reduction in actual numbers may perhaps be all the more significant when we consider the steady increase of the population of New York State. The suggestion has been made that the indicated decline in the number of syphilitic psychoses might be due to the more frequent retention than formerly of these cases for treatment in general hospitals. If this is actually occurring, it would hardly modify greatly the figures for the psychotic group of the entire state over a period of years unless real curative results were being obtained.

TABLE 3.—NUMBER AND PERCENTAGE OF CASES OF PARESIS AMONG FIRST ADMISSIONS IN NEW YORK STATE HOSPITALS

Year	Total Number of First Admissions	Cases of Paresis	Per Cent. of Paresis
1909	5,222	658	12.6
1910	4,312*	529*	12.9
1911	5,709	726	12.3
1912	5,742	719	12.5
1913	6,061	768	12.7
1914	6,263	744	12.4
1915	6,394	814	12.1
1916	4,903†	640†	13.1
1917	6,877	866	12.6
1918	6,797	913	13.4
1919	6,791	860	12.9
1920	6,573	820	12.5
Totals	71,447	9,100	

* Admissions of one hospital not included, owing to error in reporting cases.

† Figures for nine months' period only, owing to change in hospital year.

The state hospitals also receive another but much smaller group of neurosyphilitic cases, the so-called cerebral syphilis cases with psychosis. The lower curve in Chart 3 represents these cases. The number is, however, too small for us to use for statistical purposes, the average number admitted during the last ten years being only forty-three a year. The relative proportion of these cases as shown by the curve has been a little above or below 0.5 per cent. of the total admissions for a number of years past.

CONCLUSIONS

The data presented regarding the past and present rates of incidence of alcoholic and syphilitic mental disorders in New York State would seem to justify the following conclusions:

Alcoholism has declined perceptibly in the general population during recent years, the beginning of the decline antedating by some years the restrictions due to war conditions and the passage of the federal prohibition amendment.

Coincident with this decline, there has occurred a remarkable fall in the number of alcoholic psychoses, the lowest figure on record having been reached in 1920.

TABLE 4.—RATE PER 100,000 OF GENERAL POPULATION OF NEW YORK STATE OF ALCOHOLIC PSYCHOSES AND PARESIS

Year	All Psychoses	Alcoholic Psychoses	Paresis
1913	64.1	6.0	8.1
1914	65.4	4.8	8.1
1915	64.0	3.6	8.4
1916	66.5	4.0	8.7
1917	69.0	6.0	8.7
1918	67.3	3.5	9.0
1919	66.3	2.6	8.6
1920	63.3	1.5	7.9

During the first period of the World War, there was a noticeable recrudescence in both alcoholism and alcoholic mental disturbances; but after the United States entered the war in 1917, there was again a sharp fall which, so far as alcoholic psychoses are concerned, has not been again interrupted.

Psychoses due to syphilis reached the highest point of which we have a record in the year 1918. Since

then a decline in the relative and actual number of cases has occurred which, in view of the increase of population, may be regarded as at least a hopeful sign. Whether or not the more thorough and scientific treatment of syphilis in its early stages will bring about a further reduction of neurosyphilis and syphilitic psychoses, is a question to be answered in the future.

From the standpoint of mental hygiene, the situation may be regarded as encouraging. A notable advance has been made in the direction of controlling one of the outstanding causes of mental disease, namely, alcoholism, and as regards a second great cause of mental disease, namely, syphilis, there are indications that education, prophylaxis and improved methods of treatment are beginning to yield some results, as yet slight, to be sure, but nevertheless sufficient to be considered a sign of progress.

ABRUPTIO PLACENTAE *

REPORT OF CASE

EDGAR SNOWDEN, M.D.
Associate Obstetrician, Columbia Hospital
WASHINGTON, D. C.

Hemorrhage occurring from premature separation of a normally implanted placenta or, as it is more concisely termed, abruptio placentae, is one of the most serious complications of pregnancy an obstetrician may encounter. This condition was first described by Rigby, in 1776, who differentiated between it and placenta praevia, and other observers have since noted its occurrence, ascribing it to various causes; but it was not until recent years that its pathology has been studied with any degree of scientific exactness.

The term abruptio placentae is properly applied to an accident occurring in the last three months of pregnancy, for the condition arising prior to the period of fetal viability should be considered under the various forms of abortion and miscarriage.

The frequency of its occurrence is probably greater than generally considered, as many cases of mild degree are unrecognized. Williams [1] believes that it is a more frequent cause of antepartum hemorrhage than is placenta praevia. From statistics gathered by Appleton [2] at Sloan Maternity, in 5,900 labors fifty-seven separations occurred, a ratio of 1:104; at Dublin Rotunda, in 6,453 labors, seventy separations, or 1:92; at New York Lying-In Hospital, in 10,000 labors, none; in Chicago Lying-In Hospital, in 3,600 labors, six cases, or 1:600, which figures teach us that this complication is one for which we should ever be on guard.

As regards its etiology, a toxemia of whose exact nature we are as yet uninformed is the primary cause, according to most recent investigations. Trauma, nephritis, diseases of the placenta and decidua, and endometritis have all been charged as responsible. Morse [3] believes the condition due to some obstruction to the uterine circulation, the primary lesion being an engorgement of the decidual sinuses while the intramuscular hemorrhage is secondary, and he thinks that excessive mobility of the uterus predisposes to a similar acute constriction of veins in the broad ligaments. None of these causes, however, can produce a complete symptom picture of a case of abruptio placentae, and in my opinion a true toxemia is undoubtedly to blame while these other conditions are but secondary factors. The sources of this toxin are open to speculation; but from the pathologic changes produced, the evidence points to some interuterine condition, due to the pregnancy itself, and possibly being of placental origin, as has been suggested by Willson. The separation of the placenta is accompanied by hemorrhage unless the child has been dead some time. This hemorrhage may be apparent, as when the blood escapes under the edge of the placenta out through the cervix into the vagina; or it may be concealed, the blood accumulating in the retroplacental space, owing to firm attachment of the placental margin, and infiltrating the muscle fibers, thus causing an atonic area in the uterine wall, or it may also rupture into the amniotic sac. Unless, however, the separation of the placenta has been complete, the uterine wall at its site cannot retract, and there is danger of continuous hemorrhage, while the atony developing may be the cause of the woman's death after she has been delivered.

The initial lesion may be the so-called "uteroplacental apoplexy," and the small hemorrhagic areas coalesce to begin a process that, once started, steadily progresses. These hemorrhagic lesions may extend to the tubes, the ovaries, and out into the broad ligaments, giving rise to the peculiar mottled appearance of these parts on examination. Bloody fluid may be found in the peritoneal cavity, coming, most likely, from the small fissures occurring on the surface of the uterus.

The onset of a typical case is of a sudden and violent nature, the severity of the symptoms depending on the degree of separation. A woman in the last months of pregnancy, who has most likely shown signs of a toxemia with or without nephritic symptoms, complains of a sudden severe pain of a colicky nature in the abdomen, and soon shows signs of acute anemia, followed by those of shock due to the sudden distention of the uterus. A bloody vaginal discharge may or may not appear. On examination, the uterus is found larger than would be expected, very painful to the touch, and of a peculiar woody consistency. It is difficult to map out the fetus and its heart beats are rarely heard, while the examining finger in the vagina detects no placenta. With these signs present there should be no difficulty in differentiating between abruptio placentae and placenta praevia or rupture of the uterus.

The management of such a case depends on whether or not labor has begun, and the degree of cervical dilatation; but under any circumstances three indications are to be met: The uterus must be emptied, the hemorrhage stopped and the anemia combated. The best treatment is that which, with the least danger to the mother, most quickly removes the fetus and placenta, considering the life of the child a negligible quantity, as it is almost always lost.

Should the cervix be soft and easily dilatable, forceps or version may be employed; but if the cervix is firm and a concealed hemorrhage is occurring, a cesarean section is indicated, which may have to be followed by hysterectomy should the bleeding from the atonic uterus continue. The fact must be borne in mind that when hemorrhage occurs before labor has begun there is but slight tendency for the lower uterine segment to dilate and very rarely does the woman deliver herself, most patients dying of shock and hemorrhage unless prompt surgical aid is rendered. With the emptying of

* Read before the Medical Society of the District of Columbia, Feb. 23, 1921.

1. Williams, J. W.: Surg., Gynec. & Obst. 21:541 (Nov.) 1915.
2. Appleton, P.: Boston M. & S. J. 180:718 (June 26) 1919.
3. Morse: Tr. Am. Gyn. Soc. 44:103-112, 1919.

the uterus, however, not all the danger is over, for the hemorrhage may persist, as Polak [4] points out, not only from the atony of the organ, but also from the fact that in certain areas blood has penetrated the muscle bundles, disassociated the fibers and rendered them absolutely incapable of contraction. Therefore, in cases of doubt a hysterectomy is the safest procedure.

The prognosis is most grave, for with the best of treatment the maternal mortality is about 60 per cent., while the fetal is about 90 per cent., and should the patient fortunately survive, her after-treatment will demand for some time the utmost care and attention.

CASE REPORT

In presenting this report a brief history of a previous pregnancy through which I attended this patient will be of interest as bearing directly on the case at hand.

Aug. 15, 1917, I was called to see Mrs. W., aged 34. She had had the usual diseases of childhood, and in 1910 was operated on for the removal of her right ovary tube and appendix. She married at the age of 30 and had had one pregnancy, beginning in August, 1916, and ending in a miscarriage the following November. She was of a fatty type, having always had a good appetite which was gratified fully. Her last menstrual period had been April 10. At this time she was complaining a great deal of nausea with constant headache, and she had had a hemorrhage beneath every finger and toe nail, causing a marked bluish discoloration which turned reddish and finally disappeared. Her urine was normal with the exception of a marked acidity, while her blood pressure was 144 systolic and 90 diastolic. Under diet and purgation her condition improved, and she progressed uneventfully until the following January, when she began to show evidences of toxemia; her legs and abdomen were edematous, she had headache, and the urine contained traces of albumin and indican, with a few casts. Dr. A. L. Stavely saw her in consultation and agreed that it was best to bring on labor. She was sent to Georgetown Hospital, January 24, and given a large dose of castor oil and quinin which accomplished nothing, and the following day I packed the cervix tightly with gauze. This was ineffectual, and was repeated the next day with no better results. January 30, her condition had become decidedly worse. She was vomiting, her legs and abdomen were very edematous, the blood pressure was 180 systolic and 120 diastolic, and the urine contained albumin and casts.

The head of the fetus was engaged and very low in the pelvis. As it was deemed inadvisable to perform a cesarean section after the repeated attempts to bring on labor, the cervix was manually dilated, the membranes were ruptured, and forceps were applied to the head, which was in a right occipitoposterior position and was rotated with difficulty. The extraction of the child proved much more difficult than had been anticipated, and a dead male infant weighing 10 pounds 4 ounces was finally delivered. The patient made a fairly good recovery, but had digestive troubles for several months.

March 18, 1920, she came to my office to engage me for an expected confinement, her last period having been Aug. 17, 1919. She had been feeling bad for some time, but owing to illness in her home had neglected to pay attention to her own condition. At this time her face and feet were much swollen, her tongue was coated, and she was constipated. Her pulse was 74 and her blood pressure 180 systolic and 120 diastolic. The urine was scanty in amount, acid, with specific gravity 1.028, and showed a small amount of albumin, with a few hyaline and granular casts. She was placed on a strict diet, saline laxatives were ordered, and an appointment was made for a thorough examination the following week.

March 20, two days later, while shopping, she began to have severe abdominal pains, accompanied by dimness of vision, which increased so that by the time she returned to her home she was practically blind, being able only to distinguish light. I was sent for and called Dr. J. L. Riggles in consultation. We saw her within an hour of her attack and took her at once to Columbia Hospital. The uterus was found to be of boardlike consistency, about the size of a full term pregnancy, very painful on pressure, so that it was impossible to define the position of the child, whose heart beats could not be heard. The cervix was high up and undilated. A cesarean section was promptly performed, and when the abdomen was opened the uterus and tubes presented a dark, mottled appearance suggestive of hemorrhage. No bloody fluid was seen in the abdominal cavity. When the uterus was incised, a large quantity of free blood escaped and the placenta was found completely separated from the uterine wall. A dead male infant weighing 4 pounds was removed, and the uterus sutured. The patient was of a hemorrhagic type, and bled freely from every cut surface, the abdominal wound oozing between sutures for several days after their removal. She was constantly nauseated, and vomited until the morning of March 22. There was a marked suppression of urine, one-half ounce being obtained by catheter at 10 p. m. following the operation, and 2 ounces at 10 the next morning. She was given salt solution and coffee by rectum, and the kidneys began to function normally, March 22. The urine contained much albumin, with a low specific gravity and many casts, but gradually improved until by April 1 the analysis was normal. Her blood pressure fell steadily, being, March 24, 146 systolic and 82 diastolic and, March 31, 128 systolic and 78 diastolic. She returned to her home, April 2, and made a slow and tedious recovery, her mentality being yet a little dull, and she is easily confused and very forgetful. An examination of her eyes by Dr. D. K. Shute showed the optic nerves in each eye quite pale, presenting the appearance of postneuritic atrophy, which may have been secondary to a possible albuminuric retinitis.

1900 S Street.

4. Polak, J. O.: Med. & Surg. 2: 154-160 (April) 1917.

PSYCHIC MANAGEMENT OF PERSONS WITH CARDIAC DISORDERS IN FUNCTION OR STRUCTURE

ROBERT H. BABCOCK, M.D., LL.D.
CHICAGO

There is probably no class of disorders so likely to alarm a person as a disturbance of heart action or some subjective sensation taken to indicate heart disease. This statement is not applicable to the laity alone. I have seen this exemplified many times in members of the medical profession. Many a physician has been frightened by a recurring precordial pain or by an unexpected attack of cardiac irregularity, usually in the form of intermittence of the pulse. This makes itself known to the individual by a sensation in the precordium or by a feeling as if the heart jumped up into the throat, and is spoken of as palpitation. If the so-called heart attack displays the characters of paroxysmal tachycardia, it is particularly alarming.

Whatever may be the special features of the disturbing sensation and whether there be an organic defect or not, the attitude of the physician who happens to be consulted has much to do with the subsequent history of the case. If before making a careful examination he looks and acts as if he considers the symptoms very serious, or, still worse, if he makes a remark to the effect that the condition is serious and it is well that he was summoned in time to prevent a catastrophe, an impression is likely to be made on the patient's mind that it may take months to remove. I recall numerous instances of the kind, but one in particular. About twenty years ago I treated for a considerable period of time an impressionable young married woman who had been thus frightened by a physician hastily sum-

moned during her first attack of tachycardia. No evidence of heart disease could ever be discovered, but so greatly had she been alarmed by the physician that she never fully recovered from the conviction that her attacks of palpitation were an indication of organic heart disease, whereas they were in reality only manifestations of hysteria or at least of a highly unstable and excitable nervous system. They were nearly always evoked by a quarrel with her husband or some other emotional influence. Had the physician in that instance taken pains to calm the woman by refraining from any disturbing opinion until after a careful inquiry into the causation of the attack and a reassuring examination had been made, the woman might have been spared years of suffering.

But, it may be asked, how is one hurriedly summoned to a person having palpitation or precordial pain to tell at once that the attack does not portend danger, especially if the pulse is scarcely palpable, the extremities cold, and the countenance pinched and anxious? In reply, let us consider the steps naturally to be taken in such an emergency. A glance at the face, a finger on the pulse, and a few words of inquiry show that the patient is in distress either physical or mental. The obvious indication is to afford prompt relief both to the mind and to the body. Therefore, instead of implying by word or look that the patient is in danger, speak reassuringly and proceed to administer subcutaneously some remedy, as morphin or nitroglycerin, that is likely to induce calm and relieve pain if present, or dilate the capillaries and overcome vasomotor spasm responsible for possible cyanosis and coldness of the extremities. Then, while waiting for the medication to act, speak reassuring words to the sufferer and friends, who very likely are even more frightened than the patient, and whose words and actions have done much to increase the agitation of the patient. When at length the patient has become more or less quiet, begin your real physical examination. Now the history of how the attack began, the previous condition of the patient may be ascertained and, lastly, the examination of the heart and other parts of the body may be carried through. Do not at once call a precordial pain angina pectoris, even though the associated symptoms seem to warrant the diagnosis; but wait for a more suitable time when all alarm has subsided, for you may find later on that the painful seizure was intercostal neuralgia or myalgia dependent on some focal infection, and not organic disease of myocardium or aorta. This caution is particularly pertinent if the patient is young.

A second caution is also to be borne in mind; namely, a systolic murmur may be heard during tachycardia that will disappear after the heart has quieted down. Therefore, do not conclude from a systolic murmur alone during an attack of ventricular extrasystoles or unusual rapidity of action that a valvular disease is present or that the heart is dangerously dilated. Either condition may exist, but reserve your decision until a subsequent visit or until the attack is fully past. Even then, search for corroborative signs of a valvular lesion or of myocarditis before making a pronouncement that may instil the element of fear into the mind of the patient. If you are in doubt at the time of your first examination, suggest to the patient that it will be well for him to remain quiet until the morrow if he would ward off a second attack. In a word, remember the benefit of the psychic management of the case and, if convinced that danger to life really exists, inform the friends but not the patient at the time.

A married woman in the early thirties suffered from an attack of influenza in the winter of 1919. On recovery, a systolic murmur persisted, and her physician took it to mean a serious involvement of the heart; for he is reported to have warned her against any physical effort, and kept her in bed for six weeks. Even when allowed to leave her bed, she was told that she was liable to drop dead if she even stooped to pick something from the floor. When I saw her, no murmur was audible and the heart appeared to have regained perfect compensation. But even had obvious signs of heart disease been present, how deplorable would have been the psychic effect of a repetition of the caution given by her overcautious physician. She had suffered from fear of sudden death for months, and when assured that she had entirely recovered from the effect of the influenza on her heart and that the murmur had disappeared, she at once grew calm; and on being told that she could do anything within reason, she gave expression to her relief and left the office cured of her fear. This case not only illustrates the value of proper psychic management but shows the error of attaching too much importance to a systolic bruit taken alone, even though it develops during an acute illness and persists for some time thereafter.

In this connection it is well to repeat the admonition given by Sir James Mackenzie and often stated by the writer; namely, that auscultation of the heart should be the last step in an examination of the organ. The stethoscope should not be used until the history has been learned and careful palpation and percussion have been employed. Furthermore, too great emphasis cannot be placed on the dictum that a purely systolic murmur may not and often does not indicate a valvular incompetence. A diastolic bruit, on the other hand, always does evince a valvular defect. There is no intention of here discussing the various signs of organic cardiac disease, myocardial or endocardial, for it is assumed that physicians of experience and proper training are familiar with them. I should like, however, to call attention to the difficulty sometimes of deciding whether dilatation is or is not present when, because of fear or other cause, pronounced tachycardia is giving rise to apparent dilatation or perhaps is causing transient enlargement through incomplete emptying of the ventricles. Under such circumstances a definite statement or decision should be withheld until proper management has slowed the heart action to normal. If there is an element of fear in the case, a statement to the effect that the heart is enlarged is sure to prolong or even intensify the tachycardia. Nearly all persons—physicians or laymen—are greatly frightened at the thought of the heart's being enlarged, even though it be due to compensatory hypertrophy, a safety provision on the part of nature.

NONORGANIC CASES

Let us turn now to another phase of the subject, that is, let us try to understand the causation of the symptoms that so disturb and even alarm the patient. In the overwhelming majority of cases the tachycardia sets in either while the person is in bed or is free from physical exertion sufficient to excite rapid action of the heart. If intermittence of the pulse occurs, this is occasional, not constant, and usually ceases during exercise. Except in comparatively rare instances of paroxysmal tachycardia associated with auricular flutter or some demonstrable cardiac lesion, the heart does not of itself, so to speak, initiate suddenly great rapidity of action. That is, the tachycardia is not due primarily to

unrecognizable cardiac disease. It is secondary to some extraneous influence acting through the sympathetic nervous system. This influence may not be easy to ascertain, but I have found it to reside in chronic appendicitis or a chronic cholecystitis or in some emotional disturbance, so that I make it a rule to search for and eliminate some such factor before committing myself to the opinion that the heart itself is the sole factor at work. The foregoing is thrown out as a hint and not as a dictum.

A form of disordered heart action termed by the patient palpitation is intermittence of the pulse. This may manifest itself subjectively in several different ways. The heart seems to turn over with a peculiar sinking sensation, or it may seem to jump up into the throat or there may be a transient sensation of dizziness. But whatever the feeling, it is very alarming and may create the fear that the heart is going to stop beating altogether. Then if, as in one instance that came to my attention, the patient feels of his wrist and discovers the intermittence, the fear of sudden death takes possession of him and dominates him day and night. Inquiry brings out the admission in practically all cases that the patient studies his pulse frequently, when of course his apprehension intensifies, if it does not actually induce the irregularity anew. Consequently, the first step in the cure is to make the patient promise not to feel of his pulse any more, which promise is not always easy to obtain. However, if it is explained why this habit of introspection is pernicious and that the cause of the irregularity lies in some endogenous toxin from the gastro-intestinal tract acting on the vagus, or that the toxic agent may be tobacco, tea or coffee used in excess, compliance with the injunction not to feel of the pulse can generally be obtained. Proper therapeutic measures should be instituted, of course, but the first step must be to remove the element of fear.

Lastly, in considering these nonorganic cases in which fear is a dominant element we must consider precordial pain. As every physician knows, a sudden and still more a persistent pain in the region of the heart is not only highly alarming but is very likely to be accompanied by rapid and often irregular action of the heart as well as vasomotor phenomena, such as coldness of the extremities. These precordial pains may have various causes, neuralgia or neuritis of some intercostal nerve, generally of the fourth and fifth, when definite and diagnostic analgesic areas are present. In such the cause is usually to be found in some gastro-intestinal derangement, as demonstrated by Head of England many years ago. These precordial pains are in some instances accompanied by a sense of constriction; and if the pain extends into the arm, the symptom is suggestive of angina pectoris and is very likely to be so regarded by the physician. Cases are sometimes encountered in which the patient declares the pain is so intense that if it occurs during walking he is obliged to stop. Then, if there is demonstrable disease of heart or blood vessels or if the patient is past middle age, the differentiation from organic angina is not easy. Nevertheless, it is my belief that in the overwhelming majority of instances the symptom is not angina in the strict sense but intercostal neuralgia, and can be relieved by searching out the focus responsible for the nerve irritation and by instituting appropriate treatment. Essential to successful treatment is the emphatic declaration to the patient that the pain does not mean heart disease. Of course, this statement must follow a painstaking examination of the heart and vascular system, so that the patient is convinced that you know what you are talking about.

Cases are encountered now and then of a constrictive pain above the heart at the left of the sternum. In such there is usually tenderness of the pectoral muscles, and this can often be traced to a focal infection in the mouth or throat, that is, pyorrhea, a tooth-root abscess, or pus-containing tonsils. An illuminating instance of the kind was in a man, aged 31, whose supracardiac distress on walking was such as necessitated his stopping after he had gone only a few hundred feet. The diagnosis given him at a renowned medical center was coronary angina. Yet study and treatment demonstrated that the difficulty was attributable to an abscess at the root of a tooth. When I last saw him, some two years ago, this man was able to walk without eliciting pain, and he considered himself entirely well. In another man, careful inquiry brought out the admission that if he carried his left hand in his coat pocket so as not to swing the arm his pain did not occur. In this case the supposed angina was only a myositis of the external pectoral muscles. In both of these cases the psychic benefit of being assured that dangerous angina did not exist was very pronounced. On the other hand, it would have been easy to put such an element of fear into these men as to render life miserable. As it was, they were ready to endure the pain and proceed about their ordinary vocations until in time the pain ceased after the detection and removal of its cause.

PSYCHIC MANAGEMENT IN ORGANIC DISEASE

Let us turn now to the application of wise psychic management to cases of organic cardiac disease. Here, again, the attitude of the physician is of great moment. There are some practitioners who seem to think that the existence of a murmur is warrant for the conclusion that the heart is seriously damaged and that digitalis is imperatively indicated. Moreover, the patient is told that he has a leaking heart and is warned against much, if any, exercise. Fear is thus engendered, and the patient is likely to be converted into a neuropath. The fact is that oftentimes no symptoms whatever have led to a suspicion on the patient's part of anything being wrong with his heart. How frequently is this exemplified among applicants for life insurance. We all probably can recall instances of men, young and middle aged, who, totally unconscious of their hearts before being rejected as poor risks, have afterward had their attention so riveted on their circulatory pumps as to be greatly concerned over precordial sensations to which previously they would never have given a second thought. Thenceforth they have grown uncomfortably aware of their cardiac action, particularly of its increased rate, or even of breathlessness on running up stairs. If the physician to whom the element of fear has driven the sufferer takes pains to explain matters reassuringly, he is generally able to restore the patient's confidence in the pumping efficiency of his heart and accomplishes a mental cure. No untruth need be told, but it may be stated plainly and convincingly that a leak does not of itself denote a dangerously damaged heart. There are plenty of cases on record, and right among us every day, of persons who have lived or are likely to live to old age in spite of the existence of a defective heart valve. The proper way to look at a structurally defective heart is from the standpoint of its present potential efficiency and its future likelihood of remaining functionally competent. If good compensatory hypertrophy is present and, still better, if the leak is so slight as to have caused no appreciable enlargement,

the patient may usually be dismissed with the assurance that he need only protect his heart against further damage through neglect of focal and acute infections, evil habits and unwise physical strain. The foregoing applies particularly to cases of mitral and aortic insufficiencies. Stenosis, on the other hand, and especially mitral stenosis of the second and third degree, do not present so encouraging a prospect. Yet, even in such cases, almost no greater harm can be done than to instil the element of fear, since his physical limitations can be stated without frightening the patient nearly to death or making a hypochondriac out of him. On the other hand, a part of the proper psychic management of some of these cardiopaths is to impress frivolous or light minded patients with the necessity of moderation in all their habits of life.

The diagnosis of organic heart disease is not necessarily tantamount to pronouncing a sentence of death in the near future, or even death from the cardiac lesion per se. Many a person has carried a valvular defect from early life to old age. With the exception of stenosis of pronounced degree, the prospect of life is relatively good as regards the results of rheumatic endocarditis, provided the myocardium has escaped damage, and there are no complications that still further handicap the heart. Therefore, we are not justified in giving a pessimistic prognosis simply because we perceive a murmur. If subjective symptoms are wanting and if no obvious secondary effects are present, we may in most instances dismiss the patient with reassuring words as to any immediate danger.

Some words of caution and instruction it is usually well to give, but these should carry with them a spirit of hope and not fear. To live in a state of perpetual apprehension is like having the sword of Damocles over one's head and never knowing when the fatal stroke may come.

A young married woman exemplified the truth of the foregoing statement. She had recently come out of a hospital where she had been for a number of weeks and where she had become greatly alarmed over the state of her heart. She had a free mitral leak with marked secondary hypertrophy, with dilatation and hepatic and other signs of venous stasis. The prospect of a long life was anything but good; but such was her fear of sudden death that it was deemed wise and kind to encourage her even though truth might have to be stretched somewhat. Accordingly, her condition was minimized as far as was consistent with safety, and she was told she might count on several years of comparative usefulness, provided she exercised common sense and caution. She left the office declaring that she was so greatly relieved that she would not worry any more. She lived two years in relative comfort and happiness, and when death finally came it was in consequence of an acute pulmonary complication.

Recently a Chicago University student of 19 applied for permission to take gymnasium work in addition to her studies; but on being examined as to her physical fitness, she was denied the permission on the ground that she had a "bad heart." This statement so alarmed the young woman that, according to her father's declaration, she became hysterical and often burst into tears without apparent cause. The prospect of a second examination of her heart did not lessen her fear. Accordingly, on seating herself in my office she was so nervous as scarcely to be able to answer questions audibly and coherently. Her hands were ice-cold and dripping with perspiration, while her pulse was running 140 a minute. This patient was found to have a pronounced mitral insufficiency, with marked secondary hypertrophy of the left heart. Signs of secondary visceral stasis were wanting, and, moreover, the girl denied shortness of breath on exertion. In fact, she had danced and done other things like her mates without giving any attention to her heart. To me, compensation did not seem so defective as to warrant the alarming statement that she had a "bad heart." Nevertheless, it was apparent that gymnasium work might bring on a loss of compensation, and hence the examining physician had been right in rejecting the girl's application. The unqualified assertion of a "bad heart" had been the mistake, since it had injected the injurious element of fear. When at length the girl had had her condition explained as gently as possible and had been assured that her heart was not so bad as to prevent dancing and other forms of exercise in moderation, she left the office far calmer than she had been on entering. In fact, she declared she would try henceforth not to worry about her heart.

BLOOD PRESSURE

Before concluding this portion of our subject, let us consider briefly the subject of blood pressure. The recording of blood pressure has become so well-nigh universal that the laity has become possessed by the importance or, rather, the overimportance of knowing what their state is in this regard. When the pressure is dangerously high in any particular instance, the person should be so informed, no doubt. But does the information need to be so imparted as to carry with it the element of fear? Simply to say to an impressionable person, "You have too high blood pressure," or "Your blood pressure is too low" is likely to be so blunt as to render the statement alarming and make it do more harm than good. So many factors enter into the determination of blood pressure, particularly the systolic, among them the mental state or apprehension at the time of a first examination, that may it not be well to postpone a definite statement until a second or even third examination, and after treatment has been instituted to correct habits or unwise manner of life? So many instances of alarm over the blood pressure have come to my notice that I am sometimes led to question whether the indiscriminate taking of blood pressure may not be doing more harm than good. Only yesterday a woman of 52 was seen who had been told, yes, alarmed, by the statement that her diastolic pressure was too high. So it was, but not dangerously so, 105 with a systolic of 152; but she had grown, as it seemed to me, to attribute her whole physical condition to the fact, whereas it was of minor importance to other circumstances of her life. It may be difficult often to know just what to do or say in cases showing deviations from what is regarded as normal pressure, but let us remember the psychic element in dealing with our patients and try to impart information in a way to instruct, but not alarm.

A few words now in regard to blood pressure regarded as too low. It is not infrequent for me to be consulted by persons who are alarmed because told their blood pressure was too low. This statement is taken to mean or imply a serious, perhaps dangerous, weakness of the heart. In such cases we should consider not alone the systolic, but also the diastolic pressure; for if the latter or minimum pressure be such that the pulse pressure is 50 per cent. or more of the diastolic figure, the conclusion is justifiable that the low

blood pressure is not an indication of cardiac weakness. Generally, too, it is found in these cases that symptoms of cardiac asthenia are not present. In fact, some persons with this type of reduced pressure are capable of strenuous physical effort without symptoms of cardiac embarrassment. The condition seems to depend on some abdominal or other state that produces a general vasomotor dilatation or relaxation. Therefore, before we tell a patient merely that his blood pressure is too low, we should determine the pulse pressure and allow this, together with the history as regards the presence or absence of symptoms, to aid us in arriving at a conclusion. We may thus save our patient from being alarmed over his condition.

We all know the uncertainty of myocardial disease in persons beyond middle age, an uncertainty that is twofold, as it were. Not only do some cases terminate unexpectedly when, according to ordinary data on which to base prognosis, there may have been no symptoms to convey a warning of the near approach of the Grim Reaper; but we all see persons who, with such evident pathologic changes as to create doubt of more than a brief term of existence, yet live on for years in comparative freedom from cardiac incompetence. Therefore, in the light of such experiences, we do not need to be blunt in our manner of imparting our recognition of a myocarditis. If asked for the truth we do not need to lie in order to spare the feelings of the patient, but we can state the diagnosis in terms that convey our meaning without leading the patient to think his doom is sealed. For instance, most persons attach dire significance to the term degeneration, and yet it is not uncommon for a physician to tell a corpulent person whose chief complaint may be breathlessness on exertion, "You have fatty degeneration of the heart." Then perhaps follows a grave warning against any but the lightest forms of exercise. The physician's intentions are well meant, and both diagnosis and warning may be right. But is it not better in most instances to let the patient down easily by explaining that his heart muscle is not as sound and strong as in youth, and that he must not drive his engine too hard; that if he will remember that he is no longer a "kid" his pumping apparatus may yet serve him usefully for some years? It is kinder and better to err on the side of too great optimism, for should death take place sooner than was prognosticated, the friends are likely to excuse the mistake in judgment because possessed by the notion that heart disease may cause death unexpectedly at any time. Whereas, if a gloomy forecast is given, or if the patient is filled with fear of premature death, and yet does survive a dozen years or more, the friends are very likely to conclude that the physician did not know his business, or made a wrong diagnosis. In a word, let us remember the benefit physically and mentally of putting hope and courage into our heart patients instead of rendering their remaining years miserable by reason of fear. May not one possible explanation of the growing popularity of Mrs. Eddy's cult lie in the fact that it robs its followers of fear of deadly disease? Let us, then, within certain limits cultivate this habit of mind in our cardiac patients.

30 North Michigan Avenue.

Needs of Tuberculosis Service.—The outstanding need of today in the tuberculosis service is not so much further expenditure on material, but rather greater effort in the training of the personnel which must man the service, and coordination of the work with a well thought out and clearly defined policy.—H. Gauvain, *Brit. J. Tuberc.* **15**:2, 1921.

SENSITIZATION IN BRONCHIAL ASTHMA AND HAY-FEVER *

A. H. W. CAULFIELD, M.D.
Research Associate, Connaught Antitoxin Laboratories; Clinician in Medicine, University of Toronto Faculty of Medicine
TORONTO, CANADA

There are a sufficient number of aspects common to both hay-fever and bronchial asthma to make it advantageous to consider these diseases together. The purpose of this article is essentially to point out the rôle of sensitization in both conditions. There are, however, several features incidental to bronchial asthma, which, I feel, should be dealt with separately.

In contrast to the results obtained in testing typical hay-fever patients against pollens, comparative disappointment will be experienced in this respect in cases of bronchial asthma. In attempting to summarize the results obtained in the latter condition, many difficulties present themselves which are not encountered in hay-fever. The literature on bronchial asthma, which is especially voluminous since the extensive studies of I. C. Walker,[1] in 1917, fails, in my opinion, to summarize the results in such a way as to give one a comprehensive idea of what results should be expected regarding the percentage of cases showing positive reactions and the consequent results of specific treatment in all the cases in which this method of investigation was deemed worthy of trial.

Most of the reports have dealt with those aspects which have appealed to the author as outstanding, or with the results of specific treatment as illustrated by different groups, more or less similar in some particular characteristic, such as the ten illustrated protocols of twenty cases of perennial hay-fever caused by horses, reported by Walker.[2]

The explanation of this type of report, it appears to to me, is due to the fact that bronchial asthma is a syndrome which may have widely different etiologic agents. It will frequently be found as a complication of, or augmented by, other pathologic lesions, and it may itself be accompanied by a variety of complications, such as those induced by repeated attacks of true bronchopneumonia. Under these circumstances, it seems impossible adequately to summarize one's cases of bronchial asthma under such a heading as has been adopted for this paper, without citing a mass of detail for a very large number of cases.

The problems encountered in the investigation of cases of bronchial asthma will present other features besides the possibility of sensitization to a specific protein or pollen, the proportion of these depending to a great extent upon the source of the material. This has been very noticeable in contrasting the cases seen in private practice, with those among the ex-soldiers in the Department of Soldiers' Civil Re-Establishment chest clinics. In the latter group, the greatest difficulty has been experienced in distinguishing between chronic bronchitis with exacerbations and the varied types of dyspnea incident to this condition, and true bronchial asthma with an added bronchitis. Neither the clinical history or observation nor a complete physical examination will allow one, with any great degree of certainty, to differentiate between them. Positive protein tests have been obtained in a few cases, which, on

* Read before the Academy of Medicine, Toronto, October, 1920.

1. Walker, I. C.: J. M. Research **35**, **36**, **37**, 1917 and 1918.
2. Walker, I. C.: Frequent Causes and the Treatment of Perennial Hay-Fever, J. A. M. A. **75**:782 (Sept. 18) 1920.

clinical grounds, one would have been inclined to regard as examples of true bronchitis plus compensatory emphysema, and conversely, cases of typical bronchial asthma have failed to give a positve skin reaction to any protein, pollen or to bacteria or their extracts, when the former two have been repeatedly tried in large numbers and when the latter (the bacteria) have been shown by careful bacteriologic work to be constantly present in the washed sputum.

Norris and Landis[3] restrict the term bronchial asthma to "that form of spasmodic dyspnea in which the chief feature is the difficulty of emptying the lungs, that is, an expiratory form of dyspnea." In their observations on diagnosis, they mention obstructions in the upper respiratory tract, due to infections or mechanical processes, heart disease and nephritis, as capable of causing dyspnea of sudden onset; but they do not mention the difficulties of differential diagnosis between certain cases of bronchitis in which the dyspnea closely resembles that found in true bronchial asthma.

From the standpoint of sensitization, this distinction may not be so essential if one regards bacteria as capable of causing the syndrome of bronchial asthma by inducing sensitization in a manner comparable to the phenomenon as incited by the epidermal proteins. This conception is not, to my knowledge, supported by any experimental data, but is based on theoretical grounds and the clinical evidence that bronchial asthma may disappear after the removal or successful treatment of areas harboring foci of infection. In my experience, however, the results of autogenous vaccine treatment of bronchial asthma cannot be compared to the much more satisfactory results obtained in cases in which specific proteins can be used.

Positive skin reactions (cutaneous) with bacteria have been obtained so rarely in our cases at the clinic that, as a routine, it has practically been discarded. It was tried in a great number of cases suitable clinically and apparently favorable for positive tests, that is, the cases were negative to the different proteins, showed fairly constant bacteriologic findings and were asthmatic clinically.

Practically, one is inclined to try autogenous vaccines in those cases in which we fail to demonstrate protein sensitization and for which, after full and careful clinical examination, including the examination by a nose and throat specialist, we can find no definite reason for the bronchial asthmatic symptoms. The failure of vaccine, in contrast to protein therapy, is sufficiently marked to cause one to question that both are etiologic agents, acting in a comparable fashion. As a result, one feels that if progress is to be made with these (vaccine) cases we need more experimental data,[4] not only upon bacteria presumed to be acting both as the cause of subacute infections and as sensitizing agents, but also upon the effects and mode of action of the nonspecific reaction induced by any protein injection.

Some months ago, I made an analysis of 161 cases of bronchial asthma and perennial hay-fever which had been tested for sensitization by the cutaneous tests. Of this number, forty-seven (or 29 per cent.) had given positive skin reactions, among which thirty-six were cases of bronchial asthma, and eleven, bronchial asthma plus seasonal hay-fever. Sanford,[5] of the Mayo Clinic, states that in more than 800 cases tested, positive results were obtained in approximately 200, or 25 per cent. In his series, the largest number of reactions was obtained with horse dander. In 365 tests against *Staphylococcus pyogenes aureus* and *albus*, no positive reaction was found. Sanford's results and my own are practically the same. However, in my opinion, neither set of figures gives a true indication of the rôle of protein sensitization.

In explanation of the approximately 29 per cent. of positive results obtained by me, I should like to add that protein and pollen testing is but one of the methods utilized by my colleagues in the Department of Soldier's Civil Re-Establishment chest clinic. Very frequently this was undertaken as a last resort, or simultaneously with other methods of investigation, when if time had not been a factor, the cutaneous tests would probably have been omitted in a number of cases because of the demonstration of the true diagnosis by other aspects of the complete investigation.

TABLE 1.—ANALYSIS OF SIXTY-ONE CONSECUTIVE CASES IN WHICH THE PROTEIN TESTS WERE NEGATIVE

No. of Cases	No. Very Strongly Suggesting True Bronchial Asthma from the History and Clinical Observation	Type of Onset	Other (Definite) Pathologic Lesions	Treatment
61	3	War gas.. 4 Bronchitis 22 Colds .... 8 Pneumonia influenza 9 Indefinite 17	Tuberculosis, positive ..2 Tuberculosis, suspect ...1 Tuberculosis, not excluded .....8 Syphilis (Wassermann +) .....6 Obstruction of nasal passages ..6 Heart disease .....1 Aneurysm..1	25 have taken from 1 to 3 courses of autogenous vaccine

With the object of determining to what extent other etiologic features had played a more or less complete rôle in the syndrome, I made, some time ago, an analysis of sixty-one cases (Table 1), in which sensitization by the cutaneous test had not been shown. These cases all simulated, to a considerable but varying extent, the symptoms and clinical findings of true bronchial asthma. The results illustrate not only the need of the full investigation of cases of bronchial asthma, but help to explain also the low percentage of positive results obtained. The number of proteins used in this series was only twenty-four and one-half. Several of these patients returned later, when more proteins were available (from seventy to eighty), and positive results were obtained in four of these.

A review made lately of all cases in which tests had been made against proteins furnished these results, the figures indicating the frequency with which positive reactions were obtained: horse dander, 20; dog hair, 17; cat hair, 15; rabbit hair, 1; goose feather, 1; chicken feather, 11; horse serum, 6; rabbit serum, 1, egg, 5; casein, 4; milk, 3; beef, 2; lamb, 1; salmon, 1;

3. Norris and Landis: Diseases of the Chest, Philadelphia, W. B. Saunders Company, 1918.

4. F. M. Rackemann (The Relation of Sputum Bacteria to Asthma, J. Immunology 5:373 [July] 1920) reports 19.5 per cent. positive intradermal skin reactions with bacterial emulsions in cases of bronchial asthma. This percentage number includes both the early wheal-like and the late inflammatory reactions. He obtained success or amelioration only in those cases in which either type of positive reaction had been obtained. While I have not used the skin test, cutaneous or intradermal, as a routine, I certainly have failed to obtain any benefit in many cases giving marked reactions (early) to the intradermal test. The test is, to my mind, as much a guide to dosage as an indication of specificity.

5. Sanford, A. H.: Protein Sensitization in Asthma and Hay-Fever, Minnesota Med. 3:174 (April) 1920; abstr., J. A. M. A. 74:1424 (May 15) 1920.

barley, 3; oat, 11; wheat, 6; rye, 7; corn, 5; potato, 1; buckwheat, 2; bean, 3; rice, 1; celery, 2; tomato, 2; banana, 1; Brazil-nut, 1; cheese, 1; tobacco, 1; and *Staphylococcus albus*, 1.

These results more or less approximate those published by Walker,[3] Gottlieb,[6] Sanford [5] and others. Outstanding in frequency and importance, are, of course, the epidermal proteins. Among my present series of cases, in which positive tests have been obtained to these, the average number of different proteins to which one person is sensitive is 3.6, the maximum number in any one case is twelve.

A total of 276 cases have been tested against proteins and pollens. The indications that protein sensitization might be demonstrated have varied in each case; but analysis of the cases along the various lines indicated in this paper have left two general impressions which might be summed up thus:

1. Bronchial asthma is a syndrome with quite wide variations. It frequently requires a very broad type of investigation if all the possible etiologic factors which may be operative in the individual case are to be considered.

2. Despite the fullest type of investigation, there will remain a percentage of cases which one must regard as typical examples of true bronchial asthma, but for which no definite etiology can be demonstrated. Between these cases and those in which protein sensitization has been clearly established, there may be no detectable difference except that they are protein negative (to between seventy and eighty proteins).

I have thus far given considerable time to certain of the unfavorable aspects of protein sensitization, because I feel that unless this view and the need of careful differential diagnosis is emphasized, the profession is liable to minimize the really valuable addition we have had added to our methods of treatment. Unless careful attention is paid to this, the selection of cases for possible protein sensitization will be poor, the percentage of positive tests low and in consequence the results discouraging.

As an illustration of the wide range of clinical manifestation and the variety of pathologic and immunologic lesions, I have attempted an analysis of twenty-three cases in which positive tests have been obtained with the so-called epidermal proteins. Part of this analysis, with more especial reference to the results of the tests called reactions, is presented in Table 2.

To represent adequately the results obtained in this group of twenty-three cases, the general clinical picture, the entire extent of the lesion, so far as that can be determined, should be taken into consideration with the detailed results of the tests which later are summarized under the heading "remarks" in Table 2.

Viewed from the clinical and pathologic point of view, only eleven cases (of the group of eighteen, Table 2) could be regarded as simple, in that only in these would the protein sensitization seem to afford a full etiologic explanation of the bronchial asthma. Nine of these patients were treated, and up to date have been protected, except that in two instances, there was a recurrence which was found to be due to the additional fact that these patients were sensitive also to ragweed, for which treatment was not given. Two patients were not treated; but the knowledge of the cause of their attacks has seemed to help, especially in one instance in which marked sensitiveness was shown to be present to both cat and dog hair.

Among the remaining cases, there is such a wide variation regarding the number of offending proteins, the pathology, and the general clinical manifestation that it seems unfair to attempt to generalize. To illustrate this, three cases are cited.

CASE 1.—C. K., a man, aged 35, had suffered from asthma in early youth, had developed chronic bronchitis after being gassed in 1916, and by 1919, there was about 500 c.c. of sputum daily. Clinically the condition was considered to be bronchiectasis, which was given partial confirmation by stereoscopic plates. Cutaneous tests revealed major reactions to horse dander and dog hair. Repeated bacteriologic examination of the sputum revealed fairly constant bacteriologic findings.[7]

The pathologic lesion would seem to be infection of the bronchial mucosa plus compensatory emphysema and fibrosis, due to the bronchitis (or bronchiectasis), as distinct from the anatomic effects and clinical manifestations resulting from the protein sensitization.

Treatment with protein solutions and autogenous vaccines has been given in interrupted courses for about a year, and is being continued. It has certainly had a beneficial effect, as is evidenced by the patient's desire to continue treatment.

TABLE 2.—RESULTS OF ANALYSIS OF TWENTY-THREE CASES IN WHICH POSITIVE TESTS WERE OBTAINED WITH EPIDERMAL PROTEINS

Major reactions with horse dander...	17	Average number of reactions to all proteins tested against, 3.7
Major reactions with horse serum only	1	Average number of major reactions, 2.2
	18	Maximum number (per case) of reactions, 11
		Major reactions only, 8 cases
		Pollen positive cases, 6, in only one of which was the hay-fever the predominant feature.
Major (or slight) reactions with epidermals other than horse.....	5	Average number of reactions to all proteins tested against, 3.6
		Maximum number (per case) of positive reactions, 12
		Pollen positive (hay-fever), 1 case
		Clinical tuberculosis, 1 case
		Includes one case in which the reactions (slight) seemed to be of no value
Total number of cases.....	23	

CASE 2.—X. N., a man, aged 42, had suffered in childhood from asthma, which reappeared after antityphoid inoculations in 1916; since this date he has suffered from chronic bronchitis with asthmatic-like exacerbations. The cutaneous tests revealed major reactions to horse dander, dog hair, bean, banana and lamb. Repeated bacteriologic examinations of the sputum have shown fairly constant findings.[7] The results of treatment are similar to those obtained in Case 1.

CASE 3.—M. D., a woman, aged 25, had had asthma since an attack of whooping cough and pneumonia at the age of 2. Several times since then, there have been severe attacks of pneumonia, during the last of which in 1916, a strain of streptococcus and *Micrococcus catarrhalis* were reported to be present in the sputum. Physical examination demonstrated the typical barrel shaped chest with bowed shoulders and marked convexity of the upper back. Cutaneous tests revealed major reactions to horse dander, horse serum and dog hair, with lesser reactions to casein and egg yolk, as

6. Gottlieb, M. J.: Results of Tests in Hay-Fever and Asthma, J. A. M. A. 75: 12 (Sept 18) 1920.

7. The bacteriologic detail has consisted of the use of deep and surface colonies on blood agar and the use of six sugars as recommended by Brown and Holman. In Case 1, in four examinations, streptococcus γ was found four times, and streptococcus α and β, and a gram negative diplococcus, once each. In Case 2, in five examinations, streptococcus γ was found four times; streptococcus α, three times; streptococcus α, two times; streptococcus β, two times; staphylococcus, four times, and an unidentified gram-negative diplobacillus, three times.

well as to some of the pollens, although the season (January) was not favorable for a proper demonstration of these. (See remarks under hay-fever.) Two bacteriologic examinations of the sputum revealed strains of *Streptococcus pyogenes* and *M. catarrhalis*.

The pathologic lesion would include both the results of the attacks of asthma due to the specific sensitization and the anatomic changes induced by the repeated attacks of bronchopneumonia, probably arising anew from the residual areas of infection. The results of treatment were, I felt, very favorable, especially in view of the fact that treatment was not so complete as was desirable and in view of the extensive anatomic changes already established.

In the remaining cases in this group of eighteen, the rôle of sensitization would seem to have been more important than in the three cases cited in detail; or otherwise expressed, the bacteriologic factor of the bronchitis, bronchiectasis or bronchopneumonia was more amenable to natural or induced control.

In most of the patients with a coexisting infection which has led to pathologic lesions, repetition of the cutaneous tests has shown that sensitiveness tends to reappear although decreased in varying degrees as a result of treatment.[8]

One other feature that has been frequently noted in cases with coexisting and persisting pulmonary infections is the previous history of asthma in childhood or early youth. This is a very valuable indication regarding the probability of protein sensitization. There are, however, a sufficient number of cases in which it has not been possible to elicit a hereditary [9] or previous history of sensitization, so that one cannot place too great a reliance upon this evidence.

TECHNIC OF THE TESTS

Skin scarification by some instrument is the only practical means of testing one person against many proteins. A scalpel cut, as advised by Walker,[1] is the most satisfactory and less painful than the bore as originally used for the von Pirquet test. Walker states that no blood should be drawn. A series of tests performed with this point in view showed that the reactions appeared more definitely, and in slightly greater degree, if but a small droplet of blood was produced than if only serous oozing. This extent of scarification is sometimes difficult to determine. In this series of tests, reactions quite as marked were produced by cuts in which the blood escape was considerable, as in some of the cuts in which the intention was to produce only serous oozing. This is contrary to both the von Pirquet test, and, I believe, to preventive vaccine inoculation. The principles involved in all three are probably very different.

The technic which we try to achieve is this: Sets of four or five cuts are made with a scalpel on the cleansed flexor surface of the arm, of such a depth that only the minutest droplet of blood appears. With a Wright pipet and teat, a drop of 0.4 per cent. potassium hydroxid or sodium hydroxid is deposited on each cut. A glass spatula is dipped into the dried protein or pollen and rubbed into the cut, a separate spatula being used for each protein.

A positive reaction shows up in from five to fifteen minutes, or sooner, as a clear cut wheal surrounded by an areola of hyperemia. Frequently the reaction will begin to subside in from ten to fifteen minutes, although in this, there is considerable variation. The degree of the sensitization is estimated by measurement of the wheal. Especially if this is large, it is often somewhat irregular.

Occasionally, reactions will appear to which we have given the name spurious or false. All the tests may be of this type and measure from 2 to 4 mm. or more in diameter. In other cases, only certain of the tests will do this. Under these circumstances, one must rely on the control for guidance, or possibly on the probable importance of the protein or pollen, with possibly reference to the clinical history and the time of year. The distinctions I would make between a true and a spurious reaction are that the borders of the latter are less clearly defined, they seldom measure from 4 to .5 mm. in diameter, and they usually appear singly or in groups that are not in harmony with the indications in the particular case. Of course, a true reaction may appear among the spurious. Here the control and the increased size and definiteness of the true reaction will show the difference. Among 161 consecutive cases, fourteen patients showed reactions that were regarded as spurious.

Most authors state that anything below a 5 mm. wheal should not be considered. This I consider rather arbitary. If the other tests are absolutely negative and particultrly if the asthma forms only part of the clinical diagnosis, reactions under 5 mm. may be regarded as of value for therapeutic purposes.

Most of the reports in the literature indicate the degree of sensitization by referring to the highest dilution with which a positive reaction was obtained. This was the manner in which the degree of tuberculin sensitization used to be indicated. In 1908, I could find no advantage in this method over the measurement of the local reaction in relation to the quantity of tuberculin used, and this method is now fairly generally adopted. The method of making a series of dilutions and a corresponding number of cutaneous tests is tedious, and, for practical purposes, it supplies no necessary information that the dry protein or pollen test does not give. For certain experimental investigations, dilutions and the intracutaneous method is, no doubt, more exact.

Repetition of the tests after an interval of time has, with a few cases, served to demonstrate sensitization which was not shown by the first tests.

In this paper for convenience of expression, I have divided the cutaneous test reactions into major and slight. Major reactions include all those with wheals over 6 mm., and slight reactions include any under this measurement which were regarded as true, i. e., as evidence of sensitization and not spurious or false.

TREATMENT

When the offending protein cannot be deleted from the patient's food or removed from his environment, injection with protein solutions is at present the best means we have to induce desensitization.

In bronchial asthma, it has been my experience that the majority of patients need repeated courses of injections continued over long periods of time, if they are to be kept protected against the etiologic agents. Repeated cutaneous tests have shown that they often become resensitized during the interval following the treatments by which they were desensitized. In only a few cases has it apparently been possible by a comparatively few injections to protect them for long

8. It is difficult to get satisfactory percentage data on this, as patients who remain protected do not reappear at the periods when we should like to repeat the cutaneous tests. The majority of the repeated tests have consequently been performed on those for whom the protection has only been partial.

9. Cooke, Flood and Coca: Hay Fever; the Nature of the Process and the Mechanism of the Alleviating Effect of Specific Treatment, J. Immunology 2: 217 (Feb.) 1917.

against their disease. Regarding the number of treatments and the repetition of the course, I feel that each case must be treated individually.

Based upon observations made in a series of experimental desensitizations [10] in 1915, I have assumed that desensitization would best be accomplished by observing these conceptions:

(*a*) The increase of dose ideally should be such as to produce a local reaction approximating the threshold of a slight general reaction.

(*b*) The interval should be as short as possible, and reinjection given at or about the time the local reaction completely subsides. Practically, this will vary with these injections between two and four days.

(*c*) The dose should be increased as much as possible conforming to *a* and never decreased.

With these ideas in view, I adopted the method of giving a desensitizing dose a few minutes before the treatment dose, one in each arm. I hoped in this way to be able to increase the dose more rapidly. Whether this was accomplished is difficult to determine. This method of double injections does, however, give reliable information regarding the degree of reaction resulting from a particular dose, which is of value in allowing one to determine the increase in the succeeding injection. Thus, one can fairly reliably classify the degree of reaction induced by an injection in this manner: (*a*) no reaction in either arm; (*b*) reaction in the "treatment dose" arm only; (*c*) reaction in both arms, and, (*d*) reaction in both arms plus varying degrees of general reaction.

Using the information thus obtained from the previous injection, I have had but one general reaction in my cases, and that, I believe, was due to oversight on my part in not taking cognizance of the fact that the patient had missed several treatments and that the interval had been extended to two weeks.

By this method, there is no routine manner of increasing the dose. The smallest number of doses given in any case (of hay-fever) in which complete treatment was realized was six; the greatest number in any one case in which, however, treatment was not complete was thirty-three.

The various solutions used have been the desensitizing dilution of 1:100,000; the treatment dilutions of 1:20,000; 1:1,000; 1:100; 1:10, or 1:5.

HAY-FEVER

Cases of hay-fever present much less complicated pictures than do those of bronchial asthma. Classifications are consequently much more satisfactorily made, about which the results of the cutaneous tests and the effects of specific pollen treatment can be grouped.

To date, I have had for investigation seventy cases of hay-fever or suspected hay-fever, which are classified, according to the results of the tests, in Table 3. In seven of the Group A cases, major reactions were obtained to epidermal or food proteins as well; and in these instances, the protein sensitization was an equal or more important feature of the clinical condition. In two patients of Group A, major reactions were obtained only with the pollens, although their physicians referred them to me as cases of nonseasonal bronchial asthma. The true explanation lay in the fact that both, in varying degrees, suffered from repeated colds throughout the fall and winter. The bronchitis, thus induced in these seasons, did not seem in any way different from the seasonal hay-fever they suffered from during the summer and late fall. It was noticed that in one of these patients, a boy of 10, the "asthma" was often worse after he played in the fields and the barn, which he liked to do during the summer holidays. In four cases of Group A, the history was very doubtful, and it was difficult to decide at the time whether these patients suffered from a mild hay-fever of the seasonal or perennial type (Walker) or not. Two, at least, of these should be tested at a season favorable for the demonstration of pollen sensitization. In different ways, their complaints were mild distress in some way connected with the upper or lower respiratory tract. No satisfactorily positive cutaneous reactions were obtained in any of these four cases.

The six remaining patients of the nineteen had seasonal hay-fever, which included marked attacks of asthma during the worst periods of their season. The asthma disappeared with the hay-fever, and they were sensitive only to pollens.

The remaining fifty-one cases (Group B) were typical cases of seasonal hay-fever and presented the various characteristics incident to that condition.

By the end of the season of 1920, we had forty different pollens from various trees, weeds and flowers. This was due to the generous advice and aid of Prof. R. B. Thomson,[11] Department of Botany, University of Toronto, and to a gratuitous contribution by the Lederle Laboratories. Tests made with the dry pollen from these two sources almost invariably gave larger reactions than were obtained with the commercial solutions obtained from other sources. A large series of controls showed the specificity and reliableness of the dry pollen.

TABLE 3.—CLASSIFICATION OF SEVENTY CASES OF HAY-FEVER

	Remarks
A. 19 cases (bronchial asthma)....7	sensitive as well to proteins; 2 sensitive to pollens only, suffering as well from bronchitis or perennial distress; 4 history doubtful and tests negative; 6 asthma a complication during the seasonal attack, sensitive to pollens only.
B. 51 cases; typical seasonal hay-fever .....Average number of reactions, 4.6; maximum number in any one case, 15.	

Inasmuch as this number of pollens was available only by the end of the season, a presentation of the percentage of positive results recorded against each would be misleading. Major reactions were obtained against the following pollens, and treatment was given against most, if not all: alder, sweet vernal, meadow fox-tail, orchard grass, June grass, timothy, red top, daisy, dandelion, plantain, yarrow, mustard, golden-glow, dock, rye, corn, sunflower, dahlia, cosmos, goldenrod and ragweed.

With the purpose of correlating as clearly as possible the results of the tests and the clinical manifestations, periodic testing was carried out as frequently as feasible. The results are suggestive, and while closely related, may be grouped under three headings:

1. Pollen positive cases without clinical manifestations. These are well illustrated by the results obtained with the daisy pollen. This pollen was used as a test in sixty-five cases, major reactions being obtained against it in twenty-two instances, and positive (lesser) reac-

10. Caulfeild, A. H.: A Note on the Desensitization of Guinea-Pigs and Rabbits, Proc. Soc. Exper. Biol. & Med. 13:171-173, 1915.

11. To both Professor Thomson and the Lederle Laboratories, I wish to express my appreciation for their aid and generosity.

tions in twenty-three. The daisy pollenates here in June and July, but, in none of these cases were there clinical manifestations of hay-fever during this period, unless there was also sensitization to other pollens of the early summer type. The three cases reported herewith illustrate this, as well as the fact that tests done early in the season may fail to show sensitization to a pollen which does not appear till later in the season.

REPORT OF CASES

CASE 4.—M. H. had suffered onset of symptoms sometime in August for the last four years. The patient was tested, April 20, 1920, against eighteen different pollens.

The results were: daisy, 10 mm. wheal; corn, dahlia, and timothy giving slight or questionable reactions and in this order. The patient was retested,[12] Aug. 23, 1920, against eight pollens. Up to this time he had been away and had been free except possibly for the last few days. The results were: daisy, 20 mm. wheal; ragweed, 10 mm. wheal; yarrow, 8 mm. wheal, and goldenrod, 5 mm. wheal.

CASE 5.—E. F. had suffered onset of symptoms late in August for many years. When tested, June 23, 1919, against six pollens (commercial pollen solutions), the results were: daisy, 7 mm. wheal; corn and dahlia, questionable; when retested, Aug. 6, 1920, against nine dry pollens, the results were: daisy, 28 mm. wheal; yarrow, 18 mm. wheal, and ragweed, 12 mm. wheal. Partial treatment was carried out with favorable results. When retested, Sept. 16, 1920, against twelve dry pollens, the results were: daisy, 18 mm. wheal; cosmos, 18 mm. wheal; ragweed, 9 mm. wheal; yarrow, 5 mm. wheal, and goldenrod, 5 mm. wheal.

CASE 6.—A. C. had suffered onset of symptoms early in August, 1919, for the first time. When tested, June 6, 1920, against nineteen pollens, the results were: corn, ragweed and goldenrod, all slight or questionable and in this order. When retested, Aug. 20, 1920, against fourteen pollens, the patient having been practically free up to this date, although he was doubtful of the last few days, the results were: ragweed, 10 mm. wheal; goldenrod, 5 mm. wheal, and corn, questionable. Partial treatment was given with favorable results. When retested, Oct. 12, 1920, against twelve pollens, the results were: ragweed, 10 mm. wheal; cosmos, 6 mm. wheal, and daisy, questionable.

2. Comparisons of the reactions obtained before and after treatment on patients who had been practically protected from any clinical manifestations have shown that in some the reactions were as large after, as before, treatment. It is true also that in others little or no sensitization was evident after treatment. The preceding protocols illustrate both the persistence and disappearance of sensitization after partial treatment. The following report illustrates both marked reduction and disappearance of sensitization after treatment in a patient fully protected.

CASE 7.—J. C. had suffered onset of symptoms early in August for the last fifteen years. When tested, Aug. 8, 1920, against sixteen pollens, the results were: ragweed, 15, 15 mm., and goldenrod, 10, 8 mm. Treatment with both ragweed and goldenrod was complete. When tested, Sept. 23, 1920, against four pollens, the result was: goldenrod, 4 mm. or questionable.

3. Chance observations, such as the following, give some support to the observations in paragraphs 1 and 2.

(*a*) One of the laboratory assistants, who helped in the collection of the autumnal pollens, noticed a sense of discomfort while doing this. This then reminded him of the fact that some years before he suspected that he had hay-fever. Cutaneous tests with the pollens to which he was daily being exposed showed a major reaction to goldenrod, as large as many obtained in cases of definite hay-fever. Yet this man remained free from hay-fever, although he did experience an occasional and slight discomfort when too intimately exposed.

(*b*) Among those who have been tested are several who have said that they *used to have* definite attacks of asthma if they were near or drove behind horses, but that they did not notice this *now*. Yet among these cases, the cutaneous tests have shown both major and absolutely negative reactions to horse hair. Reassembling this data we have: (1) the daisy positive cases free from hay-fever during the maximum period of daisy pollenization; (2) the instance of the clinically hay-fever free laboratory worker, positively sensitive to a pollen; (3) both positive and negative reactions in fully protected cases after treatment, and (4) both positive and negative reactions in the cases *previously* asthmatic in the near presence of horses.

These data certainly seem to show that it is possible for an individual to escape the clinical manifestations of anaphylaxis even though sensitized (as shown by the tests) to a pollen or protein to which exposure is inevitable. The possible importance of this is considered under the discussion.

RESULTS OF TREATMENT

Because of obvious difficulties with these patients as encountered in a clinic, I feel that the results of treatment can more fairly be judged if only those cases seen in practice are used for analysis. Of such, there was a total of thirty-seven, which can be classified into three groups according to the amount of treatment given:

1. Seven patients received no treatment.

2. Seventeen patients for various reasons received but partial treatment; the results may be summarized as favorable, in that amelioration or improvement was observed in practically all.

3. Thirteen patients received full or complete treatment, by which I arbitrarily mean they received at least 0.5 c.c. of the most concentrated solution available. All were practically protected, that is, none suffered any real discomfort, although some had an occasional and transient attack. Several took journeys by train with comparatively little, even no, discomfort. All were able to continue their occupations or plans for recreation, and two stated they did not think they had had any hay-fever at all.

These cases can be summarized in greater detail thus: In one case both the history and the early tests were misleading. This was not corrected in time and the treatment omitted some of the chief pollens to which the patient was sensitive. In two cases, both the history and the tests were doubtful. In all three, the results may be regarded as nil. From two patients, I have, as yet, had no report. One patient reported the most surprising benefit after only a few inoculations. This may possibly be due to a natural recovery from the disease. Two patients were practically protected against the seasonal pollens with which they were treated. Both these cases are excellent examples of the value of the treatment, although appearing in this classification. One of these, a girl, had suffered for years with severe hay-fever, lasting from May till the late autumn. In the four testings carried out, she gave major reactions to fifteen different pollens, the late seasonal pollens giving negative results in the early testings. She received thirty-three inoculations between April 15 and August 9, and remained practically protected during this period. She then went on her vacation and came back to experience attacks in September from pollens against which there had not been time to desensitize her. With few exceptions each inoculation induced a marked local reaction, on one or both arms, with every now and then slight evidences of a general reaction. Retesting, September 29, demonstrated complete desensitization to some and varying degrees of reac-

12. Retestings always included the original positive or suspicious pollens, and, as well, any others thought advisable.

tion to others of the pollens with which treatment had been carried out. The remaining nine cases all showed pronounced improvement and in some instances very marked protection when compared with their experience during previous seasons.

COMMENT AND EXPERIMENTAL CONSIDERATIONS

Among some of the patients presenting the syndrome of bronchial asthma, and as well, in a very large majority of hay-fever patients, there is evidence that the lesion is an immunologic one, closely analogous to, if not identical with, the experimentally produced phenomenon called anaphylaxis.

Dunbar's [13] work indicated the etiologic rôle of the pollens in hay-fever, but his hypothesis that the clinical condition was due to a toxic portion of the pollen and that effective treatment could be induced by the use of a specific antitoxin has not been given support by the experimental or empiric data available today.

As a working hypothesis, Coca [14] has proposed that the term hypersensitiveness be classified into the mutually exclusive terms of allergy and anaphylaxis. In this conception, the two clinical conditions are taken as examples of allergy. The desirability of classifying hay-fever and bronchial asthma as examples of allergy, and differentially excluding them from the phenomenon of anaphylaxis, is based chiefly on two features brought out by Cooke, Flood and Coca,[9] namely: (1) failure passively to sensitize guinea-pigs with the blood of hay-fever patients, and (2) the necessity of giving a number of injections to patients to obtain desensitization, whereas in the experimentally induced anaphylaxis in guinea-pigs only one appropriate dose is required for desensitization.

In drawing their conclusions that passive anaphylaxis could not be induced, cognizance is taken of the contradictory work of Koessler and others. Ramirez,[15] however, draws attention to the practical importance of this possibility in blood transfusion and reports an instance of passive anaphylaxis which was apparently induced by the blood of the donor. The recipient, hitherto free from any evidence of sensitization (personal or hereditary), developed [16] an acute attack of bronchial asthma after the transfusion, on being brought in contact with horses.

In a consideration of the first contention, I feel one should take cognizance of the two types of observation presented under the heading hay-fever. These observations show a lack of correlation between the results of the tests and the clinical manifestations. The demonstration of sensitization in the face of little, or even no, clinical manifestation indicates clearly that there may well be other phenomena in the clinical condition which have not been taken into account when experiments, designed to show passive anaphylaxis with the blood of hay-fever patients were carried out. If this unappraised factor is of such importance that the still sensitized host may protect himself from clinical manifestations, it would seem reasonable to suppose that it could influence the production of passive anaphylaxis, and that, until properly controlled, this may be regarded as a possible cause of the contradictory results obtained by different experimentalists in this regard. Before the possibility of passive anaphylaxis with the blood of hay-fever patients is excluded, not only specific sensitization to a definite pollen should be shown, but also regard should be paid to the possible effect of the clinical symptomatic manifestation of the patient at the time the blood is withdrawn.

In other clinical fields, the demonstration of passive anaphylaxis has had contradictory results reported. Austrian [17] reported passive anaphylaxis in guinea-pigs to tuberculin, with the blood of an excessively tuberculin-sensitive patient. Yet, it is not generally accepted that the tuberculin reaction is an anaphylactic phenomenon; and many others have failed to induce passive anaphylaxis in this way.

The second contention does not seem to me to be valid, inasmuch as I was apparently able to obtain a greater degree of desensitization [18] with repeated reinjections than with one desensitizing dose, under the particular circumstances of the experimentally induced anaphylaxis referred to.

The precise relationship of the clinical phenomenon to experimental anaphylaxis is not purely scientific or academic in character. At least two practical considerations would seem to be involved in a fuller exposition of this relationship: (1) At present, we have no satisfactory evidence that the injudicious use of a polyvalent solution may not sensitize a patient against other pollens than those to which he was originally sensitive. I have seen two patients whose medical histories strongly suggested that following a course of treatment with a polyvalent commercial solution, their hay-fever had not improved, but had extended its seasonal duration. The conception of Cooke, Flood and Coca [9] would not admit sensitization of a human being in such fashion to be possible. (2) The question of dosage we know is of extreme importance in experimental anaphylaxis; but as yet our methods of dosage in the clinical condition are largely empiric.

Such inquiry into specific treatment as a possible cause of sensitization naturally leads to the question of "group reactions." From the entire absence of correlation between different pollens to which different patients have been shown to be sensitive, the evidence at present available points strongly against group reaction and suggests on the contrary that sensitization for one pollen is entirely specific for that pollen only. This, I understand, is not the opinion of Dr. I. C. Walker.[18] On therapeutic grounds, however, I was left with the distinct impression that after a successful desensitization with one pollen, any subsequent desensitization against a different pollen was more easily and more rapidly accomplished. This type of therapeutic result might appear to be due to group reaction.

The unsettled state of our knowledge regarding the relationship of the clinical phenomenon we have been discussing, and anaphylaxis,[19] has, as mentioned, induced Coca to suggest that the former be called allergy, and that the term anaphylaxis be reserved for the latter. This use of the term allergy at once conveys to many of us prior conceptions based on the extensive studies which have been made of tuberculin sensitiveness. In any hypothesis advanced, these prior conceptions cannot be disregarded without leading to greater confusion than already exists. The cutaneous [20] or intracutaneous test is a method of investigation for

13. Cooke, R. A., and Vander Veer, A., Jr.: Human Sensitization, J. Immunology **1**:201 (June) 1916. This article gives a very good summary of the earlier work of Dunbar, Noon and others.
14. Coca, A. F.: Hypersensitiveness; Anaphylaxis and Allergy, J. Immunology **2**:363 (July) 1920.
15. Ramirez, M. A.: Horse Asthma Following Blood Transfusion, J. A. M. A. **73**:984 (Sept. 27) 1919.
16. This occurrence is regarded as accidental by Coca (Footnote 14).
17. Austrian: Production of Passive Hypersensitiveness to Tuberculin, J. Exper. Med. **15**:2, 1912.
18. Personal communication by Dr. D. K. Detweiler.
19. Dale, H. H.: The Biological Significance of Anaphylaxis, Proc. Royal Soc. Med. **2**:126, 1920. This article gives a very clear and concise exposition of anaphylaxis and its possible significance.
20. Kolmer, Berge and Broadwell: J. Immunology **1**:5, 1916. In this number are a series of papers of interest in this connection.

many immunologic lesions, and with this test, one of the most striking features in which the reaction may vary is the incubation or latency period. Considered from this aspect alone the incubation period differentiates the results obtained in hay-fever, and in experimental anaphylaxis,[21] from, for example, those obtained with diphtheria toxin (Schick test), tuberculin, and smallpox virus (Tieche test). A comprehensive study with a view to a tentative classification would undoubtedly be of valuable assistance at the present time, would tend to simplify nomenclature with conflicting conceptions, and encourage a more comparable type of clinical observation and investigation.

Clinical Notes, Suggestions, and New Instruments

THE USE OF AN AGAR AGAR SOLUTION IN GASTRO-INTESTINAL ROENTGEN-RAY WORK

JOHN TUCKER, M.D., CLEVELAND

Roentgen-ray clinics have almost universally adopted buttermilk as a vehicle for bismuth or barium salts in gastro-intestinal work. Either this medium is often difficult to obtain, and rather expensive in some communities, or the essential refrigeration facilities are not at hand for its preservation. Moreover, ordinary buttermilk is so lacking in solid material that usually it is little better as a suspension medium than flavored water would be. From a physical standpoint a uniform and smooth suspension of barium or bismuth salts can be more satisfactorily secured by certain other solutions. The molecules of various colloids are very large, and in proper concentration with water form a loosely combined jell, which, by virtue of its viscosity, is most satisfactory as a suspension medium for insoluble salts. From among these, laboratory agar agar is the most convenient substance for this purpose.

To this end a brief research was undertaken in the department of health of the B. F. Goodrich Company of Akron. A few experiments demonstrated that a 0.4 per cent. solution of the powdered, flake or shredded laboratory agar agar in filtered water made a colloidal vehicle of almost satisfactory consistency.

The method of preparation is simple. To a 2-liter flask containing 1,000 c.c. of filtered water (plus 10 c.c. to allow for evaporation) are added 4 gm. of the agar agar. A cotton plug is used as a stopper, and the water is boiled until all the agar agar is dissolved. This usually takes from five to ten minutes. The flask is then put into a cool or cold place and within six hours is ready for use. For stock, several flasks of the solution should be prepared at the same time.

For fluoroscopic or roentgen-ray examinations of the gastro-intestinal tract we have used from 350 to 400 c.c. of this agar agar colloidal solution, to which were added from 180 to 250 gm. of chemically pure barium sulphate. The amount of barium added to the agar agar solution varied according to the "thickness" of the patient. In preparing the mixture our routine method was always to pour the barium sulphate *on top* of the agar agar solution, and then stir well until we had secured a uniform, creamy material. Just before the mixture was given to the patient it was given a final stirring to assure a uniform suspension. This solution is flat in taste, but usually it is taken without reluctance. For sensitive patients, flavoring with a small amount of cinnamon water usually removes their objection.

The advantages in using a 0.4 per cent. solution of agar agar in water as a vehicle for insoluble barium or bismuth salts may be summarized briefly as: (1) ease in preparation; (2) stable qualities (the solution is sterile); (3) uniformity of suspension of insoluble barium or bismuth salts; (4) lack of gastric symptoms after ingestion; (5) lack of expense in preparation; (6) clarity of shadow of fluoroscopic or roentgen-ray plates.

21. Knox, Moss and Brown (Subcutaneous Reaction of Rabbits to Horse Serum, J. Exper. Med. 12:14, 1910) report that after an appropriate interval sensitization to horse serum, initially administered by the intravenous route, could be demonstrated by the intradermal test. The reaction under these circumstances did not appear at once but after twenty-four hours, and subsided in from three to four days.

DISLOCATION OF CARPAL SCAPHOID

D. A. EWING, M.D., SEATTLE

Dislocation of individual carpal bones is not of frequent occurrence. Some cases are probably overlooked unless a clear roentgenogram is secured, or when there is much swelling of the joint.

In some cases one of the carpal bones may be fractured and only one of the fragments displaced, while the other is held in place by the ligaments. Fracture with dislocation is more frequently observed than dislocation without fracture.

Of the reported cases of dislocation of individual carpal bones, the most common one is the semilunar; then the scaphoid, pisiform, trapezoid, trapezium and unciform, in the order named.

In the case herewith reported the injury was sustained by a man while riding in the rear seat of an automobile. The machine ran into a curb, and he was thrown forward; he attempted to brace himself by catching hold of the top supports, and in so doing his wrist was caught in the space between the support and the side of the car; the wrist was twisted, and the lever-like action caused dislocation of the scaphoid.

I first saw him three days after the accident, when there was marked swelling of the wrist with discoloration and evident thickening of the joint. There was a prominence just below the lower end of the radius anteriorly. The patient said there had been constant pain ever since the injury was sustained. A roentgenogram revealed the scaphoid dislocated anteriorly and rotated to about a right angle, the internal attachment holding the bone from becoming entirely displaced. The scaphoid rested on the anterior lip of the lower end of the radius and was in a vertical instead of the normal, more or less horizontal, position.

The reduction was easily accomplished by traction on the hand, with adduction and direct pressure over the displaced bone. There was immediate relief of the pain. The joint was kept at rest with a splint for three weeks, and massage was begun at the end of the second week.

705 Broadway.

NEW METHOD FOR RECOVERING RUBBER TUBE LOST IN PLEURAL CAVITY

FRANK HOLYOKE, M.D., HOLYOKE, MASS.

Nowhere in medical literature have I seen any easy method outlined for recovering with safety a rubber drainage tube lost in the pleural cavity. This accident produces an embarrassing and aggravating situation. In such an unfortunate case the surgeon should bear in mind that the specific gravity of rubber or of rubber drainage tubing is about 0.98, very nearly the same as that of water. Therefore if the patient is made to lie on the sound side of the body with the operation wound uppermost, and through this wound the pleural cavity is slowly flooded with a warm sterile or physiologic sodium chlorid solution, the rubber tube will float to the surface, accelerated all the more by the act of respiration, and at the open wound may be easily removed.

280 High Street.

Lowering of Resistance.—A great many people suffer from slightly impaired health due to some seemingly trivial cause, from which there is no danger to life, but this impaired health lowers the normal resistant powers of the body so that it is rendered vulnerable to more virulent diseases. The condition that lowers this resistance may not be disease, but be due to the environment, deficient nourishment, the kind of work, or other circumstances.—J. MacKenzie, *Brit. M. J.* 1:106 (Jan. 24) 1920.

Special Article

THE WAR RISK ACT AND THE MEDICAL SERVICES CREATED UNDER IT

L. B. ROGERS, M.D.
Assistant Medical Adviser, Bureau of War Risk Insurance
WASHINGTON, D. C.

Article III of the War Risk Act, in addition to making provisions for compensation, provides that the United States shall furnish to the injured person such reasonable governmental, medical, surgical and hospital services, and such supplies, including artificial limbs, trusses and similar appliances, as the director of the Bureau of War Risk Insurance may determine to be useful and reasonably necessary.

Prior to the armistice, Nov. 11, 1918, and the subsequent general demobilization of the armed forces, very few claims had been submitted to the Bureau of War Risk Insurance from soldiers or sailors claiming compensation because of injuries received or disease contracted while in the active military or naval service. To conduct the medical work incident to these few claims it was necessary to maintain only a small force in the medical division of the Bureau of War Risk Insurance.

Immediately following the signing of the armistice there was some increase in the number of claims filed, but it was not until approximately March, 1919, that the bureau began to receive compensation disability claims in large numbers. It had not been supposed that the soldiers, sailors and marines would be discharged from the service immediately, as it was understood to be the intention of the government to retain all those suffering from injuries or illnesses incurred in or aggravated by service until the maximum degree of improvement had been obtained. This procedure was not, however, carried out, and the Bureau of War Risk Insurance was suddenly confronted with the problem of caring for thousands of disabled ex-service men and women who were presenting their claims daily when no general hospitalization program had been mapped out, nor had any plan been made whereby general physical examinations might be conducted throughout the country to determine the immediate nature and extent of the disability from which these persons were suffering. No definite schedule of ratings for disabilities had as yet been adopted, nor did the bureau have the services of a medical personnel sufficient to cope with this grave situation.

June 30, 1919, there were approximately 39,000 pending claims of disabled soldiers calling for immediate medical attention. The daily output of cases in which medical action had been taken was at this time approximately 1,000 cases. June 30, 1920, the approximate daily output was 5,257 cases. At present it is approximately 7,000 cases daily.

It became necessary to organize the medical work of the bureau on a large scale, and at the same time to provide a medical organization in the field to make contact with, examine and provide medical care and treatment for claimants. The subject of the scheme of organization of the medical work in the bureau will be taken up in another article.

To facilitate the work, to make contact more readily with the ex-service man, and to effect examinations and treatment with the least possible delay, continental United States has been divided into fourteen districts. There are also district headquarters at Porto Rico, in the Philippine Islands, the Hawaiian Islands, the Virgin Islands and in the Canal Zone.

Each district is under the jurisdiction of a district supervisor, who is a commissioned officer in the United States Public Health Service. This officer is responsible for the care and treatment of all beneficiaries of the Bureau of War Risk Insurance in his district, and as far as possible claimants are hospitalized in the district in which they reside. When beds are not available in his own district or when for climatic reasons it is desirable to send him to another part of the country, or when the proper professional services can only be obtained elsewhere, the district supervisor may send the claimant to a hospital in another district. District supervisors are considered to be field representatives in common, of the Surgeon-General of the United States Public Health Service and of the director of the Bureau of War Risk Insurance, and they operate under the conjoint direction of the chief of the hospital division of the Public Health Service and the assistant director in charge of the medical division of the Bureau of War Risk Insurance.

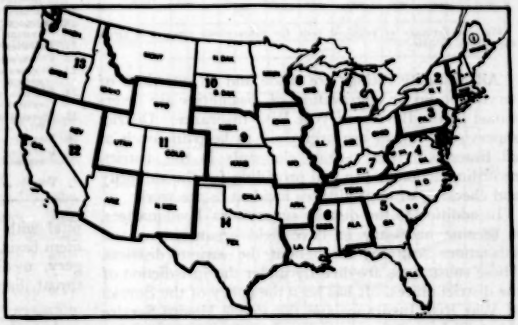

Fig. 1.—Map of United States, showing fourteen districts.

By provisions of paragraph 4 of Treasury Department Circular 140, the Bureau of War Risk Insurance is held responsible for the determination of: (*a*) the eligibility of patients of the Bureau of War Risk Insurance to compensation and treatment; (*b*) the service origin or aggravation, nature and degree of disability of their injuries or diseases; (*c*) their reference

for treatment, and (*d*) the payment of all bills incident to the discharge of the above mentioned functions.

The United States Public Health Service is held responsible for furnishing medical, surgical and hospital services and supplies, including prosthetic apparatus, to such patients of the Bureau of War Risk Insurance as may be referred to it, and the payment of all bills incident to the discharge of these functions.

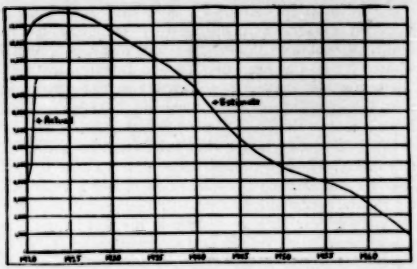

Fig. 2.—Estimate of required beds for tuberculosis cases, and actual experience to date.

All disability ratings are made and all questions of service origin or aggravation of disabilities are determined by the Bureau of War Risk Insurance. District supervisors' offices are organized to keep in touch at all times with the various claimants in the district, recording actions taken and providing for the authority and checking of expenditures incident to the work.

In addition to the district supervisors' headquarters, it became necessary to have field organizations and substations scattered throughout the various districts. These substations are directly under the jurisdiction of the district offices. It has been the policy of the Bureau of War Risk Insurance and the Public Health Service to establish in each county in every district a physician (designated examiner) who would undertake the examination, and if necessary, the outpatient treatment of the claimants of the Bureau of War Risk Insurance who may report from time to time.

The designated examiners for the Bureau of War Risk Insurance are paid on a fee basis for each examination. In larger centers and cities, physicians have been placed on duty as acting assistant surgeons in the United States Public Health Service, and they receive a part-time salary. Clerical assistance has been furnished, if necessary. In making these appointments, other conditions being equal, preference is always given to physicians who have had military or naval service during the World War.

There are in the United States approximately 2,700 designated examiners appointed by the director of the Bureau of War Risk Insurance to examine, and, if necessary, to treat claimants referred to them by this bureau. Examinations are also made by officers of the United States Public Health Service, of whom there are approximately 2,000 available in various parts of the United States.

In large centers, hospital units have been established consisting of a government hospital or a private hospital with which a contract has been made on a per diem basis, and a corps of attending specialists in surgery, medicine, neuropsychiatry, eye, ear, nose and throat diseases, etc. These centers are being used as

REPORTS OF HOSPITAL ADMISSIONS RECEIVED DURING PAST FISCAL YEAR, JULY 1, 1919—JUNE 30, 1920, AND DURING CURRENT FISCAL YEAR JULY 1, 1920-FEB. 28, 1921, CLASSIFIED BY MAJOR CLASSES OF DISEASE

	July 1, 1919 Number	June 30, 1920 Per Cent.	July 1, 1920 Number	Feb. 28, 1921 Per Cent.
1. Abnormalities and congenital malformations	42	.08	33	0.06
2. Diseases of the blood	49	.10	54	.10
3. Diseases of the bones and cartilages	484	.99	530	.95
4. Diseases of the bursae	31	.06	71	.13
5. Diseases of the circulatory system	1,992	4.07	1,893	3.41
6. Diseases of the digestive system	5,707	11.65	8,836	15.89
7. Diseases of the ductless glands and spleen	322	.66	380	.68
8. Diseases of the ear	1,033	2.11	812	1.46
9. Diseases of the eye and adnexa	978	2.00	908	1.63
10. Hernia	1,547	3.16	1,429	2.57
11. Communicable diseases	2,391	4.88	1,815	3.26
11b. Tuberculosis	11,819	24.13	14,480	26.04
12. Injuries	3,826	7.81	3,103	5.58
13. Diseases of the joints	1,602	3.27	1,387	2.50
14. Diseases of the lymphatic system	113	.23	134	.24
15. Diseases of the mind	5,203	10.62	4,267	7.67
16. Miscellaneous diseases and conditions	1,926	3.93	3,165	5.69
17. Diseases of the muscles	158	.32	165	.30
18. Diseases of the nervous system	2,592	5.29	3,936	7.08
21. Parasites	285	.58	191	.34
22. Poisonings and intoxications	181	.37	108	.20
23. Diseases of the reproductive system	812	1.66	625	1.12
24. Diseases of the respiratory system	4,365	8.91	5,668	10.19
25. Diseases of the skin, hair, etc.	303	.62	395	.71
26. Tumors	192	.39	330	.59
27. Diseases of the urinary organs	1,030	2.10	896	1.61
Total	48,983	100.00	55,611	100.00

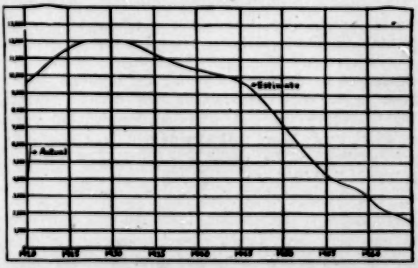

Fig. 3.—Estimate of required beds for neuropsychiatric cases, and actual experience to date.

observation and temporary treatment stations for diagnosis and for the care of emergency cases.

It has been found to be much more satisfactory to send claimants for examination, observation and diagnosis to these hospital units rather than to designated examiners. The reasons for this are obvious. Hospital units are located in communities where the best diagnostic facilities are available and where the services of competent specialists can be readily obtained. By

this method complete examinations can be secured. Once the claimant has had a thorough examination, including laboratory and roentgen-ray examinations, as well as examinations by various specialists and consultants, frequent reexamination will not be necessary. This will result in considerable economy to the government and will tend to obviate the possibility of injustice being done to the claimants. In the seventh district, comprising Indiana, Ohio and Kentucky, there are at present fifty-two hospital units. In the fifth district, comprising North Carolina, South Carolina, Tennessee, Georgia and Florida, there are forty-two hospital units. In the first district, comprising Maine, New Hampshire, Vermont, Massachusetts and Rhode Island, there are seventeen hospital units. In the eighth district, comprising Illinois, Michigan and Wisconsin, there are forty-seven hospital units. The number of cases referred to hospital units is constantly increasing, and in some districts as high as 95 per cent. of the cases are cared for in this manner. It is the intention to increase the number of these hospital units throughout the various districts and eventually, to a considerable extent, dispense with the services of designated examiners in small communities. It is believed that only in this manner can the maximum of efficiency in diagnosis and treatment be obtained.

The law provides that every person applying for or in receipt of compensation for disability under the provisions of the War Risk Act shall, as frequently and at such times and places as may be reasonably required, present himself for an examination by a medical officer of the United States Public Health Service or by a duly qualified physician designated or approved by the director of the Bureau of War Risk Insurance. The claimant may have a duly qualified physician designated and paid by him present to participate in such examination.

If he refuses or fails to appear for, or in any way obstructs, any examination, his right to compensation under the law is suspended until such refusal or obstruction ceases. No compensation is payable while such refusal of obstruction continues, and no compensation is payable for the intervening period.

Every person in receipt of compensation for disability must submit to any reasonable medical or surgical treatment furnished by the bureau whenever requested by the bureau, and the consequences of unreasonable refusal to submit to any such treatment are not deemed to result from the injury compensated for.

HOSPITALIZATION

Compensation, together with medical care and treatment, is provided for all ex-service men and women who are disabled to an extent of 10 per cent. or more from disease or injury incurred in or aggravated by military or naval service in the World War. Care and treatment of these claimants are provided in the following institutions:

(*a*) Sixty-one United States Public Health Service hospitals.
(*b*) Five United States Army hospitals.
(*c*) Fourteen United States Naval hospitals.
(*d*) Nine national homes for disabled volunteer soldiers.
(*e*) St. Elizabeth's Hospital, Washington, D. C.
(*f*) One thousand five hundred and sixty-five state, county, municipal and private hospitals (under contract).

June 30, 1919, beneficiaries of this bureau numbering 3,279 were receiving hospital care. These were subdivided in the following classes: tuberculosis, 1,362; neuropsychiatric, 1,053; general medical and surgical, 864.

June 30, 1920, there were in hospitals 17,471 cases: tuberculosis, 6,018; neuropsychiatric, 5,042; general medical and surgical, 6,411.

March 24, 1921, there were in hospitals 25,032 cases: tuberculosis, 10,107; neuropsychiatric, 6,781; general medical and surgical, 8,144.

The total number of patients hospitalized up to March 24, 1921, was 116,449: tuberculosis, 30,231;

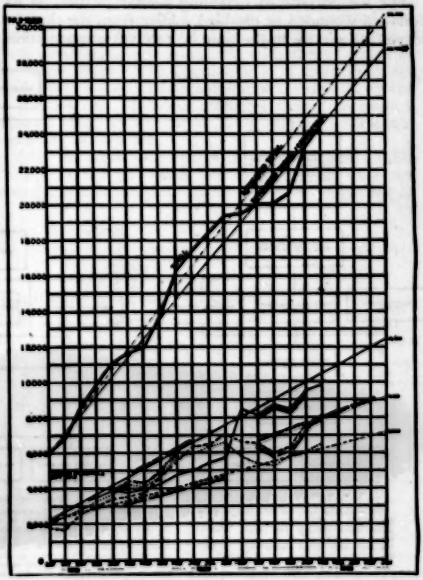

Fig. 4.—Comparison of estimated beds needed, and actual experience to date. Lines indicating actual experience are based from September, 1920, on telegraphic reports of hospital census.
* Corrected through elimination of estimated 1900 beds for feebleminded patients.

neuropsychiatric, 18,813; general medical and surgical, 67,405.

In September, 1919, Dr. W. C. Rucker, who was chief medical adviser of the bureau, prepared an estimate of the probable number of cases which would require treatment month by month, up to and including the year 1972 for tuberculosis, and 1964 for neuropsychiatry.

It is interesting to note the approximate accuracy of his prediction to date, as shown by Figure 4.

It will also be noticed that the peak of the load was expected in 1923 for tuberculosis, and for neuropsychiatry in 1925.

The number of patients admitted to hospitals during the fiscal year (July 1, 1919, to June 30, 1920) and

during the present fiscal year to date (July 1, 1920, to Feb. 28, 1921) classified by major classes of disease is indicated in the accompanying table.

CONTACT WITH CLAIMANTS

The agencies engaged in the work of soldier reestablishment are shown in Figure 5.

Contact with claimants in the respective districts is made in various ways; by news items in the newspapers, by authorities of the American Red Cross through its home service sections, and through the help of the various ex-service men's organizations and by direct correspondence with the Bureau of War Risk Insurance.

For the purpose of obtaining a clear picture, let us follow a wounded or disabled soldier from the time he leaves the service to the time he receives compensation or treatment from the government. We will suppose that a man while in the service suffered an injury or contracted a disease which would render the average man incapable of continuously following a gainful occupation, and for which he is in need of treatment. Through one of the agencies mentioned above this man has learned of his rights under the law, and of the benefits which can accrue to him on establishment of his claim. On receiving this information he has applied for instructions as to the method of procedure, and is advised that he must first make formal claim for compensation. He makes this claim by filling out Form 526 (application for compensation) obtained from any one of the district offices or from the bureau at Washington, which he submits, together with a copy of his certificate of discharge from the service, to the district supervisor or to the Bureau of War Risk Insurance direct. When the district supervisor's office receives this claim, or when a physical examination is requested by the Bureau of War Risk Insurance to establish the claim, the claimant is immediately advised, and when necessary, transportation is furnished him by the district supervisor with authority to proceed to a certain examiner or hospital unit for a physical examination or to a hospital for observation, diagnosis and treatment.

In addition to transportation, the claimant is furnished with the cost of bed and board during the time that he is obliged to travel. On the completion of the examination, return transportation to his home is furnished by the examining physician. Under the law he is also entitled to reimbursement for loss of wages incurred during the time consumed in reporting for examination and returning to his home, and also for time during which he is under observation for the purpose of making a diagnosis.

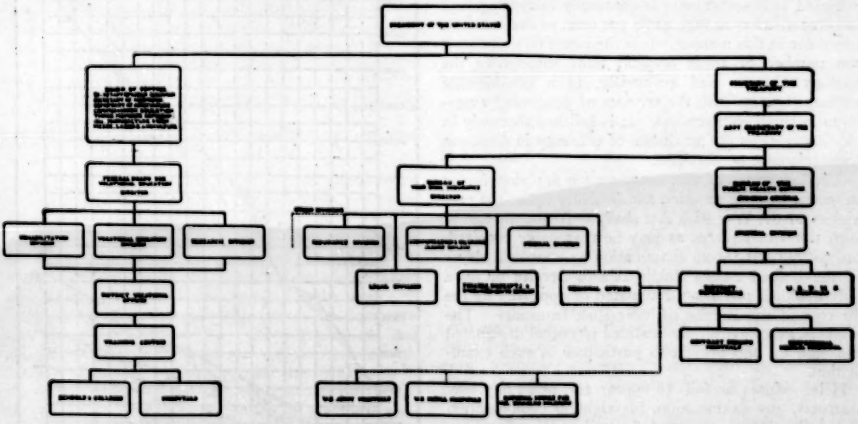
Functions (in part)—F. B. V. E.
To prescribe and furnish courses of vocational rehabilitation and to determine those eligible for same. Payment of maintenance and support to trainees and legal dependents while undergoing vocational rehabilitation.
Functions (in part)—B. W. R. I.
To receive claims for insurance, compensation and medical care because of death or disability incident to or aggravated by military or naval service. To determine eligibility of claimants to compensation, insurance or medical care and degree of disability, hospitalization and medical and dental treatment through the U. S. Public Health Service. To make payments of compensation and insurance to claimants or legal dependents. To allot to other governmental agencies moneys for expenditures incident to hospitalization and physical examination and treatment.
Functions (in part)—U. S. P. H. S.
To accomplish hospitalization, medical and dental treatment and examination of all ex-service men referred by the Bureau of War Risk Insurance and Federal Board for Vocational Education in accordance with regulations. To provide the necessary organization and facilities.

Fig. 5.—Agencies engaged in work of soldier reestablishment.

A report of this examination is made either by a designated examiner in the district or by any officer of the United States Public Health Service or by a hospital unit. In the meantime the records of the Adjutant General's office or the office of the Surgeon-General, United States Navy, as the case may be, are consulted by this bureau to determine whether or not the man's present disability is connected with his service in the Army or Navy. On the receipt of the foregoing information all the evidence in the file in this case, including the report of the physical examination, is carefully examined by a member or members of the medical staff of the Bureau of War Risk Insurance, and the percentage of disability is determined. Pending a decision as to the validity of the claim, and the establishment of the claimant's rights to compensation, he is provided with the necessary medical and surgical treatment.

HOSPITAL SERVICE IN THE UNITED STATES

ANNUAL PRESENTATION OF HOSPITAL DATA BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION

On pages 1087 to 1103 appears a list of 4,013 hospitals in the United States which provide facilities for the general care of the sick in the communities which they serve. The list includes private, general and special hospitals caring for patients with acute and subacute diseases, but does not include state institutions which are devoted largely to custodial care of tuberculous, incurable and nervous or insane patients; nor homes for deaf, blind, crippled and aged persons; nor prison or school hospitals (unless such hospitals are clearly distinguished from the prisons or schools); nor the hospitals controlled by the United States Army, Navy, Public Health Service or Department of the Interior. Private tuberculosis hospitals are included in the list since they include mostly acute or mild cases, while advanced or severe cases are more largely found in the state sanatoriums.

For each hospital are given the name, the total bed capacity and, for a large majority of the institutions, the average daily number of patients during the last fiscal year. Some of the hospitals were but recently established and had no average to report. General hospitals approved for the training of interns are marked by an asterisk (*); special hospitals, so approved, by a dagger (†). The list is given by states so that the figures for any state may be studied and comparison made with the figures for other states.

The city or town with its population and the county in which each hospital is located are also given. This makes it possible to note how many of the hospitals are located in small towns or villages and, therefore, serve rural communities, as compared with those located in the larger cities. The population of a town does not necessarily indicate the population of the district served by the hospital. Every community should be made a separate study before an accurate idea of its hospital needs can be obtained.

With the counties given, it is readily shown (Table 2) how many and what counties in each state are entirely without hospital service. Following the list of

TABLE 1.—TOTAL HOSPITALS BY STATES

State	Over 25 Beds			Under 25 Beds			Totals					Population	
	Number of Hospitals	Total Beds	Average Beds Used Daily	Number of Hospitals	Total Beds	Average Beds Used Daily	Total Hospitals	Total Number Beds	Av. No. Used Daily		Percentage of Beds Used Daily	Of State	Ratio 1 Bed to
									Reported	Estimated Total			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Alabama	37	2,884	1,576	12	197	114	49	3,081	1,287	1,488	49	2,348,174	767
Arizona	20	1,469	909	15	234	101	45	1,703	694	1,010	59	333,908	196
Arkansas	21	1,875	939	11	169	108	32	2,044	692	975	48	1,752,204	857
California	154	15,538	11,731	86	921	570	240	16,157	10,122	12,301	76	3,426,531	210
Colorado	34	4,468	2,551	20	228	156	70	4,752	2,577	3,468	73	939,629	198
Connecticut	39	4,278	3,123	9	147	105	48	4,425	2,779	3,228	72	1,380,631	312
Delaware	7	502	321	0	0	0	7	502	223	321	63	223,003	444
Dist. of Columbia	15	2,324	1,393	4	65	33	19	2,457	1,919	1,969	78	437,571	178
Florida	29	1,539	904	9	124	69	37	1,663	823	973	58	968,470	582
Georgia	42	2,972	1,981	15	256	139	57	3,228	1,882	2,689	83	2,895,832	897
Idaho	17	884	469	11	180	76	28	1,064	457	545	51	431,866	406
Illinois	186	21,888	14,725	86	999	625	244	22,887	12,624	15,338	68	6,485,280	283
Indiana	74	5,392	3,668	23	272	171	107	5,659	3,143	3,839	68	2,930,390	518
Iowa	78	5,719	3,717	44	669	327	122	6,388	2,821	4,044	63	2,404,021	377
Kansas	57	3,956	2,662	32	468	257	89	4,424	2,309	3,249	73	1,769,257	400
Kentucky	45	2,956	2,213	18	297	193	63	3,702	1,779	2,376	64	2,416,630	653
Louisiana	28	2,240	1,595	13	210	117	41	2,450	1,085	1,482	74	1,798,509	727
Maine	39	1,795	1,178	14	217	119	43	1,972	1,057	1,268	69	768,014	389
Maryland	44	6,170	4,389	5	104	74	49	6,274	3,950	4,454	71	1,449,661	231
Massachusetts	146	14,449	9,077	66	782	469	192	15,225	8,321	9,542	63	3,852,356	254
Michigan	99	9,453	5,917	78	777	478	177	9,230	5,095	6,395	69	3,668,412	398
Minnesota	104	9,118	6,380	62	966	534	167	10,074	5,382	6,534	65	2,387,125	238
Mississippi	33	1,439	943	10	272	174	42	1,708	770	1,117	65	1,790,618	1,054
Missouri	78	7,674	4,911	15	239	122	93	7,908	4,202	5,043	64	3,404,055	431
Montana	16	2,220	1,220	14	210	98	46	2,430	721	1,418	59	548,889	380
Nebraska	44	3,115	2,087	25	302	211	69	3,397	1,794	2,298	68	1,296,372	569
Nevada	3	377	184	11	176	86	19	553	262	270	49	77,407	139
New Hampshire	23	1,232	779	8	121	69	31	1,354	731	839	62	443,083	328
New Jersey	68	9,668	5,702	11	185	123	79	9,853	4,779	5,825	59	3,155,900	320
New Mexico	20	1,360	900	12	210	102	30	1,519	684	997	66	360,350	237
New York	311	55,171	37,510	60	975	731	371	56,146	30,919	38,247	68	10,384,829	185
North Carolina	60	3,097	1,982	18	295	159	78	3,392	1,662	2,121	63	2,559,123	761
North Dakota	25	1,434	940	15	207	97	40	1,641	727	1,043	64	645,669	393
Ohio	120	14,117	9,458	48	771	567	178	14,888	7,651	9,955	68	5,759,394	388
Oklahoma	34	1,730	1,089	21	320	168	55	2,050	888	1,206	58	2,028,283	989
Oregon	27	2,194	1,518	19	310	155	46	2,504	1,207	1,668	67	782,389	312
Pennsylvania	228	30,134	20,792	44	692	444	272	30,826	18,263	21,236	69	8,720,017	283
Rhode Island	15	2,050	1,596	4	70	39	19	2,137	1,479	1,611	75	604,397	283
South Carolina	30	1,761	1,074	9	151	125	39	1,912	721	1,199	63	1,683,724	881
South Dakota	25	1,845	1,195	9	130	69	34	1,984	1,079	1,264	64	636,547	321
Tennessee	38	3,198	2,147	10	183	115	48	3,448	1,535	2,262	66	2,337,885	679
Texas	91	5,779	4,005	70	781	525	140	7,257	2,982	4,400	61	4,663,228	617
Utah	9	899	624	6	85	35	15	1,045	609	659	63	449,396	430
Vermont	12	919	627	10	130	89	22	749	449	716	69	352,428	470
Virginia	59	4,581	3,101	13	207	123	72	4,788	2,217	3,224	67	2,309,187	482
Washington	57	5,150	3,455	39	425	229	96	5,583	2,615	3,684	66	1,356,621	243
West Virginia	47	3,054	1,571	9	121	51	56	3,185	1,210	1,622	50	1,463,701	459
Wisconsin	81	6,894	4,572	63	768	402	139	7,570	4,124	4,974	66	2,632,067	348
Wyoming	8	483	260	14	219	105	22	702	281	365	52	194,402	266
Totals	2,926	296,825	196,535	1,087	17,334	9,689	4,013	311,159	166,089	208,024	67	105,708,771	340
1	2	3	4	5	6	7	8	9	10	11	12	13	14

hospitals for each state are given the number and names of the counties in that state which have no hospitals.

Hospitals having less than twenty-five beds are not named in the lists since they are scarcely large enough to provide a minimum of equipment necessary for the character of treatment usually provided by hospitals. Since these are important adjuncts in the hospital field, however, the number and total bed capacity are given at the end of the list for each state and included in the total figures for each state.

TOTAL HOSPITALS IN THE UNITED STATES

Table 1 gives the totals for all states, including the hospitals, the bed capacity, the average number of patients daily (partly estimated), the percentage of beds used daily, and the ratio of population to each hospital bed. Altogether there are 2,926 hospitals having more than twenty-five beds each, with a total of 293,825 beds, of which 196,535 on the average are occupied each day. There are 1,087 hospitals having less than twenty-five beds each, with a total capacity of 17,334 beds, of which 9,489 on the average are occupied each day. This makes a grand total of 4,013 hospitals, the total capacity of which is 311,159 beds, and of these it is estimated that 206,024 are occupied each day on the average. Of the 4,013 hospitals, 3,219 reported a daily average of 166,060 beds occupied, and from the percentage of beds occupied in each state the total daily average of beds in the other hospitals of the state was calculated. On this basis, therefore, in the 4,013 hospitals, 206,024, or 67 per cent., of the beds on the average were occupied. The largest proportion of beds occupied was 76 per cent. in California, followed by 73 per cent. each in Connecticut and in the District of Columbia; 72 per cent. in Colorado, and 71 per cent. in Maryland. The smallest proportion of beds occupied on the average was 48 per cent. each in Arkansas and Nevada, and 49 per cent. in Alabama.

TABLE 2.—COUNTIES WITH AND WITHOUT HOSPITALS

State	Total Counties	Counties Having Hospitals			Counties Having No Hospitals	Percentage Having No Hospitals
		Over 25 Beds	Under 25 Beds	Total		
Alabama	67	14	3	17	50	74.6
Arizona	14	10	2	12	2	14.3
Arkansas	75	10	8	18	57	76.0
California	58	41	5	46	12	20.7
Colorado	63	20	9	29	34	53.9
Connecticut	8	8	0	8	0	0.0
Delaware	3	1	0	1	2	66.7
Dist. of Columbia	1	1	0	1	0	0.0
Florida	54	13	0	13	41	76.0
Georgia	152	21	7	28	124	81.6
Idaho	41	11	4	15	26	63.4
Illinois	102	51	10	61	41	41.2
Indiana	92	37	16	53	39	42.4
Iowa	99	37	19	56	43	43.4
Kansas	105	33	12	45	60	57.1
Kentucky	120	21	11	32	88	73.3
Louisiana	64	10	6	16	48	75.0
Maine	16	12	2	14	2	12.5
Maryland	24	12	1	13	11	45.8
Massachusetts	14	13	1	14	1	7.1
Michigan	83	30	18	48	35	42.2
Minnesota	86	40	23	63	23	26.7
Mississippi	82	17	5	22	60	73.2
Missouri	115	30	6	36	89	77.4
Montana	44	21	7	28	16	36.4
Nebraska	93	19	16	35	58	62.4
Nevada	10	7	0	13	3	23.7
New Hampshire	10	10	0	10	0	0.0
New Jersey	21	17	3	19	2	9.5
New Mexico	32	11	6	15	13	40.4
New York	61	48	5	53	8	13.1
North Carolina	100	31	9	40	60	60.0
North Dakota	53	13	11	24	29	54.7
Ohio	88	46	9	55	33	37.5
Oklahoma	77	18	9	27	50	65.0
Oregon	36	17	6	23	13	36.1
Pennsylvania	67	32	3	34	33	49.9
Rhode Island	5	3	0	3	2	40.0
South Carolina	45	17	1	18	27	60.0
South Dakota	69	15	6	21	48	69.6
Tennessee	96	14	8	22	74	77.1
Texas	251	43	21	64	187	80.6
Utah	29	6	3	9	20	69.0
Vermont	14	7	3	10	4	28.6
Virginia	100	23	6	29	71	71.0
Washington	39	20	4	24	15	38.4
West Virginia	55	*23	4	27	28	50.9
Wisconsin	71	32	13	45	26	36.6
Wyoming	21	6	8	14	7	33.3
Totals	3,027	1,602	330	1,932	1,095	36.0

PROPORTION OF BEDS TO POPULATION

A study of the proportion of beds to population in the various states is interesting. For the entire country the proportion is one bed to every 340 people. The state having the largest supply of hospital beds is Nevada, where there is one bed for every 139 people, followed by the District of Columbia, one bed for every 165 people; New York, one to 185; Arizona, one to 196, and Colorado, with one to every 198. The state having the lowest supply of hospital beds is Mississippi, where there is only one bed for every 1,054 people, followed by Oklahoma with one bed for every 980 people; Georgia, one to every 897, and South Carolina, with one to every 881 people. Although New York has 371 hospitals, it has a smaller bed supply in proportion to population than Nevada, which has only nineteen.

SUPPLY OF HOSPITALS BY COUNTIES

Table 2 gives for each state, respectively by columns, (*a*) the total number of counties in the state; (*b*) the number of counties having hospitals with twenty-five or more beds; (*c*) the number of counties having only hospitals of *less* than twenty-five beds; (*d*) the total number of counties having hospitals; (*e*) the number of counties which have no hospitals, and (*f*) the percentage of counties having no hospitals.

As previously noted, the names and the total number of counties without hospitals appear at the end of each state list of hospital facilities. Of the 3,027 counties in the forty-eight states, 1,695, or 56 per cent., have no hospitals. If it were not for hospitals of less than twenty-five beds there would be 330 more counties without hospitals.

FACTORS INDICATING NEED OF HOSPITALS

There are four factors in these statistics which must be taken together to show accurately whether or not a state (or community) has an adequate supply of hospitals. These factors are (*a*) the number of square miles to each hospital, (*b*) the ratio of beds to population, (*c*) the percentage of beds constantly occupied and (*d*) the percentage of counties in the states which are entirely without hospitals. In Table 3, the figures on these points are given for all states and for districts. The ratio of hospitals to square miles ranges from 1 hospital to every 42 square miles in Massachusetts to 1 to every 5,780 square miles in Nevada. The ratio of beds to population ranges from one bed to every 139 people in Nevada to one to every 1,054 people in Mississippi; the average percentage of beds in constant use varies from 48 per cent. in Arkansas to 76 per cent. in California. As to counties which have no hospitals, Connecticut and New Hampshire are the only states in which every county has one or more hospitals, while at the other extreme comes Georgia, where 81.6 per cent. of its counties are without hospitals. It is noteworthy, however, that Georgia has 152 counties with an average of 386 square miles each as compared, for example, with 86 counties in Minnesota with an average of 940 square miles each.

The district most lacking in hospital supply is that represented by the South-Central group of states, which has only one bed to every 705 people, and 73.8 per cent. of the counties in the district are entirely without hospitals. It is apparent, therefore, that although only 61 per cent. of the beds in the existing hospitals are occupied on the average, this is due either to the preponderant number for the white race or to their being otherwise inaccessible to large proportions of the population. The fact that so large a proportion of the counties is without hospitals indicates that they are not well distributed. Mississippi stands out prominently as the state most lacking in hospital facilities, there being only one bed to every 1,054 people; and 73.8 per cent. of its counties are without hospitals. The district which appears to have the most adequate hospital supply is that represented by the Western States, where there is one bed for every 211 people. That supply is, however, more apparent than real, since, on the average, 69 per cent. of the beds are occupied and there are 41.4 per cent. of the counties which do not have hospitals. The many sparsely settled districts in these mountain states makes essential a larger number of hospitals than would otherwise be needed. The district which in reality has the most adequate hospital supply is that represented by the North Atlantic group, which has one bed for every 242 people; only 67 per cent. of all beds are occupied on the average, and only 15.3 per cent. of the counties are without hospitals. The states having a well distributed hospital service are Connecticut and New Hampshire, in which every county is supplied with hospitals. In New Hampshire only 60 per cent. of the hospital beds on the average are occupied. Connecticut has more hospital beds in proportion to population than New Hampshire, but a larger percentage (73) of beds are occupied. The average area supplied by each hospital in the North Atlantic group is only 148 square miles—another evidence of a better distribution.

TABLE 3.—HOSPITALS SHOWN BY STATES IN DISTRICT GROUPS

State	Area, Square Miles	Square Miles per Hospital	Ratio of Beds to Population	Percentage of Beds Occupied	Percentage of Counties With No Hospitals
North Atlantic States					
Maine	29,895	605	289	60	12.5
New Hampshire	9,031	291	228	60	0.0
Vermont	9,124	415	470	69	28.6
Massachusetts	8,039	42	254	69	7.5
Rhode Island	1,067	55	238	75	40.0
Connecticut	4,820	100	312	73	0.0
New York	47,854	128	185	68	13.1
New Jersey	7,514	77	259	69	8.5
Pennsylvania	44,832	105	236	69	20.9
Totals	161,976	148	242	67	15.3
South Atlantic States					
Delaware	1,965	391	444	66	66.7
Maryland	9,941	308	321	71	45.8
Dist. of Col.	60	3	185	72	0.0
Virginia	40,262	559	694	67	71.0
West Virginia	24,022	429	460	50	50.9
North Carolina	48,740	625	761	63	60.0
South Carolina	30,495	702	681	63	60.0
Georgia	58,725	1,022	797	65	81.6
Florida	54,861	1,495	923	58	76.0
Totals	269,071	630	808	65	68.4
North Central States					
Ohio	40,740	229	288	66	37.5
Indiana	36,045	337	340	68	42.4
Illinois	56,043	259	332	68	41.2
Michigan	57,480	414	359	69	42.2
Wisconsin	53,924	426	348	66	36.6
Minnesota	80,858	494	326	65	38.7
Iowa	55,586	456	377	65	42.4
Missouri	68,727	729	431	64	77.4
North Dakota	70,183	1,755	393	64	54.7
South Dakota	76,808	1,281	321	61	62.6
Nebraska	76,808	1,113	369	63	62.4
Kansas	81,774	919	405	62	57.1
Totals	758,368	338	355	66	62.0
South Central States					
Kentucky	40,181	633	662	64	72.3
Tennessee	41,687	744	679	66	77.1
Alabama	51,279	1,047	767	49	74.6
Mississippi	46,362	1,104	1,054	66	73.2
Louisiana	45,409	1,135	807	71	75.0
Texas	262,398	1,574	617	70	80.6
Arkansas	53,335	1,539	657	46	76.0
Oklahoma	69,414	1,352	660	58	66.0
Totals	609,355	1,049	705	61	73.8
Western States					
Montana	146,201	1,178	270	59	36.4
Wyoming	97,594	1,436	273	71	32.3
Colorado	103,658	1,481	199	72	53.9
New Mexico	122,503	3,403	237	60	46.4
Arizona	113,810	2,599	198	59	16.3
Utah	82,184	3,479	420	63	69.0
Nevada	109,821	5,780	130	46	18.7
Idaho	83,354	2,977	420	54	62.4
Washington	66,836	786	243	66	39.4
Oregon	95,607	2,070	213	67	34.1
California	156,899	741	210	76	20.7
Totals	1,177,220	1,886	211	69	41.4
All states	2,973,990	741	340	67	36.0

TABLE 4.—HOSPITAL FACILITIES OF FIFTY LARGER AMERICAN CITIES

City and State	Population	Number of Hospitals	Total Number Beds	Ratio of Beds to Population	Average Number of Beds Used Daily	Percentage of Beds Used Daily
New York, N. Y.	5,621,151	97	24,154	232	17,873	74
Chicago, Ill.	2,701,705	78	12,588	214	9,186	73
Philadelphia, Pa.	1,823,779	69	11,459	156	8,161	70
Detroit, Mich.	993,739	16	3,131	317	2,411	77
Cleveland, Ohio	796,836	23	2,809	275	1,966	69
St. Louis, Mo.	773,009	27	4,510	171	3,021	67
Boston, Mass.	747,923	45	5,889	127	4,417	75
Baltimore, Md.	584,008	29	5,198	112	3,691	71
Pittsburgh, Pa.	588,193	20	4,251	139	3,106	75
Los Angeles, Calif.	575,480	22	2,716	211	2,118	78
San Francisco, Calif.	506,676	22	3,878	131	2,909	75
Buffalo, N. Y.	505,875	16	2,452	206	1,997	79
Milwaukee, Wis.	457,147	21	2,748	166	1,710	70
Washington, D. C.	437,414	18	2,499	182	1,710	70
Newark, N. J.	414,216	15	1,655	249	1,149	69
Cincinnati, Ohio	401,158	17	3,184	126	2,103	66
New Orleans, La.	387,408	12	971	399	709	73
Minneapolis, Minn.	380,582	19	2,843	134	2,019	71
Kansas City, Mo.	324,410	17	2,042	159	1,346	66
Seattle, Wash.	315,652	13	1,582	199	1,104	70
Indianapolis, Ind.	314,194	14	1,599	196	917	57
Jersey City, N. J.	297,554	6	1,057	281	519	49
Rochester, N. Y.	295,750	10	1,509	197	1,089	72
Portland, Ore.	258,288	11	1,132	228	949	84
Denver, Colo.	256,369	10	1,740	147	1,218	70
Toledo, Ohio	243,164	10	894	265	547	61
Providence, R. I.	237,595	11	1,192	199	846	71
Columbus, Ohio	237,031	11	1,401	169	981	70
Louisville, Ky.	234,891	12	1,219	192	889	73
St. Paul, Minn.	234,698	15	2,108	111	1,597	76
Oakland, Calif.	216,261	10	509	401	421	83
Akron, Ohio	208,435	4	610	342	275	67
Atlanta, Ga.	200,616	15	1,117	179	895	81
Omaha, Neb.	191,601	19	1,795	107	1,257	70
Worcester, Mass.	179,741	7	881	203	580	66
Birmingham, Ala.	178,270	13	1,216	147	729	60
Richmond, Va.	171,667	17	1,522	113	1,112	73
Syracuse, N. Y.	171,647	11	1,288	133	967	75
New Haven, Conn.	162,380	5	740	219	570	77
Memphis, Tenn.	162,351	11	1,429	114	1,149	80
San Antonio, Texas	161,379	9	981	167	662	68
Dallas, Texas	158,976	5	980	161	670	77
Dayton, Ohio	152,559	5	856	180	621	77
Bridgeport, Conn.	149,152	6	725	206	479	66
Houston, Texas	138,276	9	694	199	525	76
Hartford, Conn.	138,036	9	1,253	110	1,014	81
Scranton, Pa.	137,709	11	863	159	585	68
Grand Rapids, Mich.	137,634	7	577	239	415	72
Paterson, N. J.	135,875	4	679	200	414	61
Youngstown, Ohio	132,358	7	625	211	529	84
Totals	25,220,820	684	135,202	185	94,198	69

HOSPITAL FACILITIES IN LARGER CITIES

Table 4 shows the hospital supply for the fifty larger cities in the United States, including the total number of hospitals; the total bed capacity; the ratio of beds to population, and the average number and the percentage of beds in use daily. Omaha appears to be the most generously supplied, having one hospital bed for every 107 people; but even of these a high percentage (70 per cent.) are continually occupied. Other cities in order of their supply, and the ratio to population, are: Hartford, Conn., 110, 81 per cent. occupied; St. Paul, 111, 73 per cent. occupied; Baltimore, 112, 71 per cent. occupied; Richmond, 113, 73 per cent. occupied; Memphis, 114, 80 per cent. occupied, and Boston, 127, 75 per cent. occupied.

The city most lacking in hospital service is Akron, Ohio, with only one bed for every 508 people, although only 67 per cent. of the beds are continuously occupied. It would be interesting to know the reason for this small percentage. Next in order of cities having a low supply of hospitals and the ratio of each to population are Oakland, Calif., 401, 80 per cent. occupied; New Orleans, 399, 73 per cent. occupied; Detroit, 317, 77 per cent. occupied, and, Youngstown, Ohio, 311, 84 per cent. occupied. There are fifteen of these cities having less than 1,000 hospital beds available for the sick of their communities.

The cities having the highest percentages of beds in constant use are Portland and Youngstown, each 84; Hartford and Seattle, each 81, and Oakland and Memphis, each 80 per cent. Thirty-four of these cities have 70 per cent. or more of their available hospital beds in constant use. Houston has only 34, the lowest percentage in constant use, the next being Jersey City with 50 per cent., and Toledo with 55 per cent.

The hospital supply in these fifty cities is one bed to every 185 people, and of this supply, on the average, 69 per cent. of the beds were in continuous use, leaving a reserve of 31 per cent. of the beds unoccupied.

TABLE 3.—HOSPITALS OTHER THAN THOSE GIVING GENERAL CARE

State	Tuberculosis		Nervous and Mental		Government		Totals	
	Total Hospitals	Total Beds	Total Hospitals	Total Beds	Total Hospitals	Total Beds	Hospitals	Beds
Alabama	1	165	2	2,550	1	56	4	2,771
Arizona	.....	.....	2	696	7	1,227	9	1,923
Arkansas	1	180	1	2,000	1	200	3	2,380
California	.....	.....	20	12,378	7	3,288	27	15,666
Colorado	.....	.....	5	2,104	2	2,470	7	4,574
Connecticut	4	664	11	5,400	1	500	16	6,564
Delaware	.....	.....	1	450	.....	.....	1	450
Dist. of Col.	.....	.....	1	10	6	6,551	7	6,551
Florida	.....	.....	1	1,000	4	924	5	2,524
Georgia	2	150	4	4,194	3	290	9	4,634
Idaho	1	200	2	640	2	160	5	1,000
Illinois	.....	.....	21	19 845	7	5,500	28	25,345
Indiana	1	150	10	7,795	3	1,250	14	9,595
Iowa	1	242	16	6 174	1	200	18	6,616
Kansas	1	104	12	4 657	4	777	17	5,538
Kentucky	.....	.....	10	5 382	4	110	14	5,492
Louisiana	.....	.....	5	3,168	4	921	9	4,089
Maine	3	299	6	2,132	4	456	13	2,877
Maryland	1	440	20	5 083	4	1,302	25	6,725
Massachusetts	4	1,112	35	18,755	9	3,302	48	23,169
Michigan	1	180	14	10 8 9	1	75	16	11,144
Minnesota	1	283	10	8 536	3	243	14	9,062
Mississippi	1	40	3	2 375	.....	.....	4	2 415
Missouri	3	347	19	9 340	3	981	25	10,618
Montana	1	88	1	1 !60	.....	.....	2	1,248
Nebraska	1	100	5	2,795	.....	.....	6	2,895
Nevada	.....	.....	1	200	.....	.....	1	200
New Hampshire	1	65	4	1 805	1	979	6	2,739
New Jersey	1	280	21	11 147	1	54	23	11,481
New Mexico	.....	.....	1	475	6	11,557	7	11,932
New York	5	824	54	46 118	12	4,085	71	53,027
North Carolina	1	200	10	3,782	2	1,450	13	5 432
North Dakota	1	130	2	1 670	3	62	6	1,862
Ohio	1	100	27	16 896	6	1,985	34	19,081
Oklahoma	.....	.....	4	2,470	4	140	8	2 880
Oregon	1	105	6	3,380	2	67	9	3,452
Pennsylvania	3	1,208	62	25,047	4	1,650	69	28,725
Rhode Island	1	270	3	1,980	3	1,398	7	3,648
South Carolina	1	50	2	2,230	5	1,884	8	4,304
South Dakota	1	42	3	1,392	1	450	5	1,884
Tennessee	1	136	9	2,569	4	1,419	14	4,504
Texas	3	498	10	7,474	4	2,536	23	10,508
Utah	.....	.....	2	610	2	240	4	850
Vermont	.....	.....	4	1,358	1	50	5	1,408
Virginia	1	986	13	5,428	3	1,842	17	7,215
Washington	.....	.....	6	4,020	6	517	12	4,537
West Virginia	1	175	3	2,450	.....	.....	4	2,625
Wisconsin	1	180	49	10,313	3	280	53	10,853
Wyoming	.....	.....	2	365	2	240	4	605
Totals	52	10,150	521	295,382	156	62,148	729	388,680
Addenda*	343	31,394						
Totals	395	41,544	521	295,382	156	62,148	1,072	400,074

* Three hundred and forty-three tuberculosis hospitals handling acute and subacute cases, which were included with general hospitals, Table 1.

SUPPLEMENTARY HOSPITALS

Table 5 includes supplementary data on 1,072 hospitals which limit themselves either to a restricted class of patients or to specialized branches of medical practice. These hospitals are listed under three heads, Tuberculosis, Nervous and Mental, and Government.

1. Of a total of 395 tuberculosis hospitals (furnishing 41,544 beds), 343 were classed among hospitals giving general care because they accept mainly acute or mild cases. The remaining fifty-two hospitals (furnishing 10,150 beds) were not included in Table 1. In most cases controlled and financed by state or county, these fifty-two hospitals receive patients chiefly in chronic and advanced stages of the disease. This does not show all the hospital care provided for tuberculous patients, however, since a certain number of such cases are accepted also by some of the general hospitals.

2. Nervous and mental hospitals reach a total for the United States of 521 hospitals, with a bed capacity of 295,382. The line between acute and chronic stages of mental disease is not as sharply defined as in the case of tuberculosis. Here again, patients with mild or acute nervous disorders are cared for in many of the general hospitals. Insane patients, however, are more commonly sent to the state institutions.

3. Government hospitals as listed show 156 hospitals with 63,148 beds. Included under the heading are United States Public Health Service hospitals, Indian hospitals and military hospitals.

Public Health Service hospitals limit their services to: beneficiaries of the War Risk Insurance Act (ex-soldiers, sailors, marines, army and navy nurse corps); beneficiaries of the federal Civil Service Compensation Act (postal employees); government lighthouse service; coast guard service; seamen of the United States merchant marine, and merchant mariners.

Indian hospitals, as their name implies, serve the Indian communities on reservations. They are under the jurisdiction of the Department of the Interior.

Military hospitals include the army and navy hospitals. Patients are limited to officers and enlisted personnel of these two arms of the military service.

HOMES, SCHOOLS AND MISCELLANEOUS INSTITUTIONS

Data on 1,363 homes show a bed capacity of 134,984, and on 187 schools a bed capacity of 25,740. The figures on bed capacities are not to be considered as composed entirely of beds given over to patients under treatment, since hospital functions in many such institutions are not sharply differentiated from hotel functions.

Not included under preceding classifications are: forty-seven state penitentiary hospitals with 2,197 beds.

In certain states penitentiary hospitals are the only class of hospital beds available to tuberculous negroes at the present time.[1]

TABLE 6.—HOSPITALS OF ALL TYPES

Institutions	Number	Capacity
General service hospitals	4,013	311,150
Government hospitals	156	63,148
Nervous and mental sanatoriums	161	260,382
State tuberculosis sanatoriums*	52	10,150
Penitentiary hospitals	47	2,197
Homes for aged, blind, incurable, etc.	1,363	194,994
Totals	6,152	817,020

* Including 343 general service hospitals which handle acute and subacute cases there are altogether 395 tuberculosis hospitals with a total capacity of 41,544 beds.

TOTAL HOSPITALS, SANATORIUMS AND HOMES

Altogether, therefore, in the United States there are 6,152 hospitals, sanatoriums and homes, having a total of 817,020 beds, with the population of the United States according to the 1920 census as 105,683,108, there is, counting all institutions, one bed for every 129 people.

1. Agnes D. Randolph in the Texas State Journal of Medicine, January, 1921, quoting Mr. Lubin of the Texas State Tuberculosis Sanatorium, says: "Texas has 50,000 cases of tuberculosis in her negro population." And all the length and breadth of the state not one bed has been provided for them except in the penitentiary.

ACKNOWLEDGMENTS

The conclusion of this survey marks a distinct advance in our grasp of the details of the national hospital problem. While many previous surveys of fractional parts of the hospital field have given us a notion of the extent of hospital service in local communities, or of the country-wide extent of certain classes of hospital service, data on all institutions serving hospital needs have scarcely been available. Nor would such a result have been possible had it not been for the splendid cooperation of hospital executives, superintendents, directors, chiefs-of-staffs, hospital consultants and others who have contributed to the success of this survey. The various state advisory committees on hospitals have rendered signal service in their work of inspecting and grading the hospitals approved for internships.

In conclusion, may we hope that the future will see not only an increase in our general knowledge of hospitals throughout the country but also a more critical and self-appraising interest of cities, counties and rural communities, in the progressive betterment of their hospital service.

BED CAPACITY OF GENERAL HOSPITALS AND DAILY AVERAGE IN CONSTANT USE DURING PRECEDING YEAR

"General Hospitals" includes medical, surgical, maternity, orthopedic, pediatric, tuberculosis and contagious institutions.

Hospitals marked with an asterisk (*) are approved for the training of interns as general hospitals; those marked with a dagger (†), as special hospitals.

ALABAMA

	Total Beds	Av. Beds In Use
Albany, 7,852—Morgan		
Benevolent Society Hospital	25	18
Anniston, 17,734—Calhoun		
St. Luke's Hospital	50	15
Gaosmer, 18,674—Jefferson		
Elizabeth Duncan Memorial Hosp.	50	18
Birmingham, 178,276—Jefferson		
Birmingham Infirmary	300	200
Children's Hosp. of Birmingham	25	16
Fraternal Hospital	50	...
Hillman Hospital*	200	160
Norwood Hospital	100	65
Red Mountain Sanatorium (T.B.)	40	35
Robinson-Nelson Infirmary	36	15
Salvation Army Maternity Hosp.	35	30
South Highlands Infirmary	125	90
St. Vincent's Hospital	250	...
Columbia, 800—Houston		
Pullagra Sanatorium	40	15
Dothan, 16,894—Houston		
Dr. M. S. Davies Private Hosp.	50	12
Mosley Hospital	78	60
Enterprise, 3,018—Coffee		
Coffee County Memorial Hospital	130	...
Fairfield, 4,998—Jefferson		
Employees' Hospital of the Tennessee Coal, Iron and Railroad Co.	350	130
Florence, 10,338—Lauderdale		
Eliza Coffee Memorial Hospital	60	30
Gadsden, 14,737—Etowah		
Gadsden General Hospital	35	18
Hails' Sanatorium	50	32
Huntsville, 8,018—Madison		
Huntsville Infirmary	40	10
Mobile, 60,151—Mobile		
City Hospital*	150	92
Dupa-Restaurant Sanatorium	50	...
Mobile Infirmary	60	50
Providence Infirmary	100	50
Southern Infirmary	35	30
Montgomery, 43,531—Montgomery		
Hale Infirmary	50	...
Highland Park Sanatorium	30	25
Laura Hill Hospital	40	...
St. Margaret's Hospital	102	65
Selma, 15,302—Dallas		
King Private Sanatorium	26	...
Union Street Private Hospital	45	45
Vaughan Memorial Hospital	50	35
Sheffield, 6,023—Colbert		
New Belmont Hospital	34	15
Talladega, 6,540—Talladega		
Mary Elizabeth Hospital	25	9
Tuskegee, 2,475—Macon		
John A. Andrews Mem. Hos. (col.)*	60	28
Twelve General Hospitals of less than 25 beds	197	77
Totals	3,061	1,387

In Alabama the following fifty counties have no hospitals: Autauga, Baldwin, Barbour, Bibb, Blount, Bullock, Butler, Chambers, Cherokee, Chilton, Choctaw, Clarke, Clay, Cleburne, Conecuh, Coosa, Covington, Crenshaw, Cullman, Dale, Dekalb, Elmore, Escambia, Fayette, Franklin, Geneva, Greene, Hale, Henry, Jackson, Lamar, Lawrence, Lee, Limestone, Lowndes, Marion, Marshall, Monroe, Perry, Pickens, Pike, Randolph, Russell, St. Clair, Shelby, Sumter, Talapoosa, Washington, Wilcox, Winston.

ARIZONA

	Total Beds	Av. Beds In Use
Bisbee, 9,205—Cochise		
Calumet and Arizona Hospital	50	39
Phelps-Dodge Corporation, Copper Queen Branch, Hospital Dept.*	60	46
Douglas, 9,016—Cochise		
Calumet Hospital	24	16
Cochise County Hospital	48	40
Ft. Defiance, 138—Apache		
Episcopal Eye, Ear, Nose and Throat Hospital	45	14
Ft. Defiance General Hospital	50	20
Ft. Defiance Tubercular Sanat.	30	15
Globe, 7,044—Gila		
Gila County Hospital	50	35
Old Dominion Hospital	25	18
Humboldt, 930—Yavapai		
Humboldt Hospital	40	20
Jerome, 2,203—Yavapai		
United Verde Hospital	40	24
Miami, 6,029—Gila		
Miami Inspiration Hospital	40	21
Morenci, 5,168—Greenlee		
Detroit Copper Company's Hosp.	24	...
Longfellow Hospital	25	9
Nogales, 5,186—Santa Cruz		
St. Joseph's Hospital	30	...
Phoenix, 29,053—Maricopa		
Arizona Deaconess Hospital	33	19
Desert Inn Sanitarium	100	65
Maricopa County Hospital	75	...
Maricopa Co. Tuberculosis Hosp.	65	...
Phoenix Sanitarium	120	...
St. Joseph's Hospital	135	110
St. Luke's Home for Tuberculosis	65	40
Prescott, 4,302—Yavapai		
Mercy Hospital	36	29
Pamentgaaf, Among the Pines	25	...
Pine Lawn Sanatorium (T.B.)	25	15
Prescott Cottage Sanat. (T.B.)	28	20
Sacaton, 250—Pinal		
Pima and Maricopa Hospital	40	...
Tucson, 20,292—Pima		
St. Mary's Hospital and Sanit.	80	...
Tucson-Arizona Sanat. (T.B.)	50	40
Yuma, 4,237—Yuma		
Yuma Hospital	30	18
Fifteen General Hospitals of less than 25 beds	234	52
Totals	1,702	694

In Arizona the following two counties have no hospitals: Graham, Mohave.

ARKANSAS

	Total Beds	Av. Beds In Use
Fayetteville, 5,363—Washington		
City Hospital	35	25
Ft. Smith, 28,879—Sebastian		
Sebastian County Hospital	100	...
Sparks Memorial Hospital	110	67
St. Edward's Infirmary	40	...
St. Johns Hospital	53	...
Helena, 8,113—Phillips		
Helena Hospital	50	...
Hope, 3,839—Hempstead		
Josephine Hospital	30	15
Hot Springs, 11,695—Garland		
Leo N. Levi Memorial Hosp. Assn.	66	24
St. Joseph's Infirmary	63	...
Jonesboro, 9,304—Craighead		
St. Bernard's Hospital	60	34
Little Rock, 65,039—Pulaski		
Baptist Hospital	80	...
Bush Memorial Hospital	38	19
Logan H. Roots Mem. City Hosp.	150	56
Pulaski County Hospital	250	135
St. Luke's Hospital	105	...
St. Vincent's Infirmary*	225	...
Pine Bluff, 19,220—Jefferson		
Davis Hospital	50	25
Florence Sanitarium	25	...

	Total Beds	Av. Beds In Use
Quinton (Village)—White		
St. Paul's Hospital	80	...
Texarkana, 8,257—Miller		
Michael Meagher Memorial Hosp.	75	...
St. Louis Southwestern Hospital	200	77
Eleven General Hospitals of less than 25 beds	169	37
Totals	2,044	492

In Arkansas the following fifty-seven counties have no hospitals: Arkansas, Baxter, Benton, Boone, Bradley, Calhoun, Chicot, Clay, Cleveland, Columbia, Conway, Crawford, Crittenden, Cross, Dallas, Desha, Drew, Faulkner, Franklin, Fulton, Grant, Hot Spring, Howard, Izard, Jackson, Johnson, Lafayette, Lawrence, Lee, Lincoln, Little-River, Lonoke, Madison, Marion, Mississippi, Monroe, Montgomery, Nevada, Newton, Ouachita, Perry, Pike, Poinsett, Polk, Pope, Prairie, Randolph, Saint Francis, Saline, Scott, Searcy, Sevier, Sharp, Stone, Van Buren, Woodruff, Yell.

CALIFORNIA

	Total Beds	Av. Beds In Use
Alameda, 28,806—Alameda		
Alameda Sanitarium	50	...
Alhambra, 9,096—Los Angeles		
Alhambra Hospital	40	25
Anaheim ,5,526—Orange		
Anaheim Sanitarium	30	20
Auburn, 2,376—Placer		
Placer County Hospital	120	78
Bakersfield, 18,638—Kern		
Kern County Hospital	130	110
Mercy Hospital	47	...
San Joaquin Hospital	50	...
Banning, 1,800—Riverside		
Dr. King's Sanatorium (T.B.)	25	23
Southern Sierras Sanat. (T.B.)	35	25
Belmont, 360—San Mateo		
California Sanatorium (T.B.)	100	70
Berkeley, 56,036—Alameda		
Alta Bates Sanatorium	40	...
El Reposo Sanitarium	40	33
Roosevelt Hospital	70	...
University of Calif. Infirmary	45	25
Chico, 8,277—Butte		
Enloe Hospital	50	35
Sisters' Hospital	30	...
Chula Vista, 100—San Diego		
McNabb Hosp. and Sanitarium	40	25
Colfax, 911—Placer		
Colfax School for the Tuberculous	130	125
Colusa, 1,946—Colusa		
Colusa County Hospital	38	30
Compton, 6356—Los Angeles		
Jewish Consumptive Relief Sanat.	70	70
El Centro, 5,464—Imperial		
El Centro Hospital	42	30
Eureka, 13,215—Humboldt		
Humboldt County Hospital	187	101
Sequoia Hospital and Sanitarium	60	40
Union Labor Hospital	47	25
French Camp, 225—San Joaquin		
San Joaquin General Hospital	300	250
Fresno, 45,086—Fresno		
Burnett Sanitarium	150	90
Fresno County Hospital	250	225
Sample Sanatorium	25	...
Ft. Bragg, 2,408—Mendocino		
Ft. Bragg Hospital, Inc	25	10
Glendale, 13,536—Los Angeles		
Glendale Sanitarium	81	71
Thornycroft Farm Hosp. & Sanit.	70	60
Grass Valley, 4,006—Nevada		
W. C. Jones Memorial Hosp.	25	9
Hanford, 4,629—Kings		
Hanford Sanitarium, Inc	30	20
Kings County Hospital	39	...
Hollister, 2,309—San Benito		
San Benito County Hospital	38	...
La Vina (P.O. Only)—Los Angeles		
La Vina Sanatorium (T.B.)	100	95
Livermore, 1,916—Alameda		
Arroyo Sanatorium (T.B.)	160	135
Livermore Sanitarium	90	75
Loma Linda (P.O. Only)—San Bernardino		
Loma Linda Sanit. and Hosp.	156	70
Long Beach, 55,593—Los Angeles		
Long Beach Sanitarium	50	35
Seaside Hospital	100	70
Los Angeles, 471,367—Los Angeles		
Angelus Hospital	110	98
Barlow Sanatorium (T.B.)	86	65
California Hospital	156	145
Children's Hospital[1]	95	70
Clara Barton Hospital	80	80
Crocker Street Hospital	100	63
Lincoln Hospital	35	30
Hospital of the Good Samaritan	140	115
Kaspare Cohn Hospital	50	37
Los Angeles County Hospital[a]	1,283	941
Los Angeles Hospital of the Santa Fe Coast Lines Hosp. Assn.	100	70
Methodist Hosp. of Southern Calif.	90	90
New French Hospital	50	50
Pacific Hospital	75	73
St. Vincent's Hospital	95	...
White Memorial Hospital[a]	75	70

1. Small village; postoffice is Armstrong Springs.

	Total Beds	Av. Beds In Use
Los Gatos, 2,222—Santa Clara		
Oakes Sanitarium (T.B.)	40	35
Madera, 2,404—Madera		
Madera County Hospital	50	28
Manor (P.O. Only)—Marin		
Arequipa Sanatorium (T.B.)	40	40
Martinez, 2,115—Contra Costa		
Contra Costa County Hospital	70	...
Marysville, 5,461—Yuba		
Rideout Memorial Hospital	30	18
Merced, 3,103—Merced		
Merced County Hospital	65	60
Modesto, 9,241—Stanislaus		
Robertson Hospital	30	25
Monrovia, 5,408—Los Angeles		
Kolb-Kirschner Cottages (T.B.)	45	42
Pottenger Sanatorium for Diseases of the Lungs and Throat	125	115
National City, 1,733—San Diego		
Elwyn Sanitarium	26	12
Paradise Valley Sanitarium	60	45
Nevada City, 1,782—Nevada		
Nevada County Hospital	23	...
Oakland, 216,261—Alameda		
Baby Hospital Association	30	25
East Bay Sanatorium	50	45
Fabiola Hospital Association	125	110
Oakland Central Hospital	40	35
Providence Hospital	100	75
Samuel Merritt Hospital	120	100
Orange, 3,529—Orange		
Orange County Hospital	65	40
Oxnard, 2,255—Ventura		
St. John's Hospital	35	22
Palo Alto, 5,998—Santa Clara		
Peninsula Hospital	53	18
Pasadena, 45,334—Los Angeles		
Las Encinas Sanitarium	55	...
Pasadena Hospital Association	120	93
Placerville, 1,914—El Dorado		
El Dorado County Hospital	70	44
Pomona, 13,505—Los Angeles		
Pomona Valley Hospital	50	22
Red Bluff, 3,530—Tehama		
Tehama County Hospital	65	...
Redlands, 6,871—San Bernardino		
Redlands Hospital Association	25	10
Redwood City, 2,642—San Mateo		
Canyon Sanatorium (T.B.)	25	20
Riverside, 19,341—Riverside		
Riverside County Hospital	100	68
Sacramento, 65,857—Sacramento		
Mater Misericordiae Hospital	85	85
Sacramento Hospital	300	230
Southern Pacific Emergency Hosp.	25	...
White Hospital	70	58
San Bernardino, 18,721—San Bernardino		
Ramona Hospital	50	25
San Bernardino County Hospital	194	130
San Diego, 74,683—San Diego		
Alpine Sanatorium (T.B.)	60	...
Isolation Hospital	130	...
San Diego County General Hosp.	300	170
St. Joseph's Hospital	150	126
San Fernando, 1,666—Los Angeles		
Isolation Hospital of Forestore, Calif. Tuberculosar Sanitarium	30	12
San Francisco, 506,676—San Francisco		
Adler Sanatorium	82	60
Emergency Hospital Service	74	...
Fairmount Hospital	85	...
Florence N. Ward Sanatorium	50	35
Franklin Hospital	200	...
French Hospital	193	135
Mahanemann Hospital of the University of California	114	85
Hospital for Children and Training School for Nurses[a]	300	161
Lane Hospital[a]	300	250
Mary's Help Hospital	150	140
Merton Hospital	50	30
Mt. Zion Hospital[a]	185	150
San Francisco Hospital[a]	800	562
San Francisco Hospital, Leprosy Isolation Division	50	19
Southern Pacific General Hosp.[a]	250	225
St. Francis Hospital	160	140
St. Joseph's Hospital	145	100
St. Luke's Hospital[a]	150	120
St. Mary's Hospital[a]	185	150
Stanford University Hospital	125	...
Union Iron Works Co., Employees Hospital	30	...
University of California Hosp.[a]	250	188
Sanitarium, 25—Napa		
St. Helena Sanitarium	150	90
San Jose, 39,804—Santa Clara		
Columbia Hospital	80	...
East Columbia Hospital	80	21
O'Connor Sanitarium	100	75
Santa Clara County Hospital	270	210
San Leandro, 5,963—Alameda		
Alameda County Hospital	70	...
San Luis Sanitarium	25	15
San Mateo, 5,779—San Mateo		
Church of St. Matthew Red Cross Hospital	45	40
San Mateo County Hospital	60	52
San Pedro, 5,999—Los Angeles		
San Pedro Hospital	9	9

	Total Beds	Av. Beds In Use
Santa Ana, 15,485—Orange		
Community Hospital	40	30
Santa Barbara, 19,441—Santa Barbara		
Santa Barbara General Hospital and Farm	100	90
Santa Barbara Cottage Hospital[a]	100	...
St. Francis Hospital	35	30
Santa Cruz, 14,636—Santa Cruz		
Hanly Sanitarium	35	...
Santa Cruz County Hospital	30	...
Santa Monica, 15,233—Los Angeles		
St. Catherine's Hospital	50	15
Santa Rosa, 7,817—Sonoma		
General Hospital	25	15
Sonoma County Hospital	55	40
Scotia, 1,500—Humboldt		
Scotia Hospital Association	30	16
Sonora, 2,620—Tuolumne		
Tuolumne County Hospital	54	...
South Pasadena, 7,642—Los Angeles		
Pasadena Sanitarium	100	...
South San Francisco, 1,909—San Mateo		
South San Francisco Hospital	30	25
Stockton, 40,296—San Joaquin		
Dameron Hospital	55	30
St. Joseph's Home and Hospital	170	...
Susanville, 910—Lassen		
Lassen County Hospital	50	25
Turlock, 3,504—Stanislaus		
Emanuel Hospital	50	15
Weaverville, 1,100—Trinity		
Trinity County Hospital	30	20
Westwood (P.O. Only)—Lassen		
Westwood Hospital	65	40
Willows, 1,130—Glenn		
Glenn County Hospital	40	...
Woodland, 3,187—Yolo		
Woodland Sanitarium	60	20
Yolo County Hospital	60	...
Yreka, 1,134—Siskiyou		
Siskiyou County Hospital	75	65
Yuba City, 1,180—Sutter		
Sutter County Hospital	38	25
Fifty-Six General Hospitals of less than 25 beds	921	300
Totals	16,157	10,122

In California the following twelve counties have no hospitals: Amador, Calaveras, Del Norte, Imperial, Inyo, Lake, Mariposa, San Luis Obispo, Shasta, Sierra, Solano, Yosemite.

COLORADO

	Total Beds	Av. Beds In Use
Alamosa, 317—Alamosa		
Alamosa Hospital	25	18
Boulder, 11,295—Boulder		
Boulder-Colorado Sanitarium	125	...
University of Colorado Hospital[a]	79	54
Brush, 2,105—Morgan		
Sims-Kiser Mercy Institute	53	...
Canon City, 4,581—Fremont		
Dr. Graves' Private Hospital	35	...
Holmes Hospital	25	10
Colorado Springs, 30,575—El Paso		
Beth-El Hospital	30	40
Cragmor Sanatorium (T.B.)	100	90
El Paso County Farm and Hosp.	50	45
Glockner Sanatorium (T.B.)	200	200
Nob Hill Lodge Sanat. (T.B.)	35	30
St. Francis Hospital[a]	135	110
Star Ranch in the Pines Sanatorium (T.B.)	50	30
Sunnyrest Sanatorium (T.B.)	45	30
Cripple Creek, 2,325—Teller		
St. Nicholas Hospital	25	...
Teller County Hospital	29	...
Denver, 256,369—Denver		
Agnes Memorial Sanat. (T.B.)	150	130
Children's Hospital[a]	100	50
Denver City and County Hosp.[a]	500	300
Mercy Hospital[a]	150	...
National Jewish Hospital for Consumptives (T.B.)	200	167
Park Avenue Hospital	25	25
St. Anthony's Hospital[a]	175	...
St. Joseph's Hospital[a]	200	175
St. Luke's Hospital[a]	140	101
Steele Memorial Hospital	100	35
Durango, 4,116—LaPlata		
Mercy Hospital	35	...
Edgewater, 712—Jefferson		
Sanatorium of the Jewish Consumptive Relief Society	180	175
Englewood, 4,336—Arapahoe		
Swedish National Sanatorium for Tuberculosis	97	97
Ft. Collins, 8,710—Larimer		
Ft. Collins Hospital	25	...
Glenwood Springs, 2,672—Garfield		
Glenwood Sanitarium	35	18
Greeley, 10,663—Weld		
Greeley Hospital	40	25
Weld County Hospital	30	...
La Junta, 4,154—Otero		
Atchison, Topeka & Santa Fe Hospital	45	33
Mennonite Sanatorium (T.B.)	40	33
Leadville, 4,959—Lake		
St. Vincent's Hospital	35	15
Littleton, 1,624—Arapahoe		
Dr. Colliers Private Hospital	25	23

	Total Beds	Av. Beds In Use
Longmont, 4,256—Boulder		
Longmont Hospital	50	25
Loveland, 3,651—Larimer		
Rutherlands Hospital	40	...
Manitou, 1,807—El Paso		
Mt. Calm Sanatorium (T.B.)	50	...
Quray, 1,165—Quray		
C. V. Bates' Hospital	25	16
Pueblo, 42,908—Pueblo		
Minnequa Hospital	210	150
Pueblo County Hospital	25	...
St. Mary Hospital	175	...
Salida, 4,689—Chaffee		
Denver & Rio Grande R. R. Hosp.	70	40
Red Cross Hospital	50	30
Telluride, 1,816—San Miguel		
Telluride Hospital	25	18
Trinidad, 10,906—Las Animas		
Mt. San Rafael Hospital	125	...
Wheatridge (P.O. Doty)—Jefferson		
Evangelical Lutheran Sanitarium (T.B.)	34	32
Woodmen (P.O. Doty)—El Paso		
Modern Woodmen of America Sanitarium (T.B.)	230	...
Twenty General Hospitals of less than 25 beds	289	62
Totals	4,752	2,377

In Colorado the following thirty-four counties have no hospitals: Adams, Archuleta, Baca, Bent, Cheyenne, Clear Creek, Conejos, Costilla, Crowley, Custer, Dolores, Douglas, Eagle, Elbert, Gilpin, Grand, Gunnison, Hinsdale, Montezuma, Montrose, Rio Blanco, Saguache, Sedgwick, Washington, Yuma.

CONNECTICUT

	Total Beds	Av. Beds In Use
Bridgeport, 149,123—Fairfield		
Bridgeport Hospital*	250	198
Columbus Hospital	40	...
Englewood Hospital	100	40
Gates Hospital	30	20
Home	90	85
St. Vincent's Hospital*	225	152
Danbury, 19,986—Fairfield		
Danbury Hospital	80	60
Derby, 11,226—New Haven		
Griffin Hospital	60	45
Greenwich, 9,826—Fairfield		
Greenwich Hospital	100	52
Hartford, 138,036—Hartford		
City Hospital	162	...
Hartford Hospital*	560	432
Hartford Retreat Hospital	50	34
St. Francis' Hospital*	460	321
Wildwood Sanatorium (T.B.)	50	37
Wilson Sanitarium	30	...
Meriden, 24,736—New Haven		
Meriden Hospital	60	35
Middletown, 13,044—Middlesex		
Middlesex County Hospital*	70	48
New Britain, 68,316—Hartford		
New Britain General Hospital	100	70
New Canaan, 1,673—Fairfield		
Dr. Brooks' Sanatorium (T.B.)	28	28
New Haven, 162,655—New Haven		
Elm City Private Hospital	37	...
Grace Hospital*	150	125
Hospital of St. Raphael*	190	150
New Haven Hospital*	275	234
Springside Hospital	110	60
Yale Infirmary	25	...
New London, 25,688—New London		
Lawrence and Memorial Associated Hospital	112	68
Shanlin, 1,168—New London		
The Seaside (T.B. Children)	55	31
Norwalk, 27,557—Fairfield		
Norwalk Hospital	31	...
Norwich, 22,504—New London		
William W. Backus Hospital*	90	51
Putnam, 7,711—Windham		
Day-Kimball Hospital	40	35
Sharon, 1,595—Litchfield		
Sharon Hospital	25	12
Shelford Springs, 2,650—Tolland		
Cyril and Julia C. Johnson Memorial Hospital	30	18
Stamford, 28,008—Fairfield		
Stamford Hospital	125	72
Torrington, 16,517—Litchfield		
Charlotte Hungerford Hospital	70	25
Wallingford, 6,710—New Haven		
Gaylord Farm Sanatorium (T.B.)	130	126
Waterbury, 91,410—New Haven		
St. Mary's Hospital*	110	102
Waterbury Hospital*	180	96
Willimantic, 12,338—Windham		
St. Joseph's Hospital	54	...
Winsted, 5,240—Litchfield		
Litchfield County Hospital	70	35
Nine General Hospitals of less than 25 beds	147	18
Totals	4,625	2,770

All counties in Connecticut have hospitals.

DELAWARE

	Total Beds	Av. Beds In Use
Farnhurst, 216—New Castle		
New Castle County Hospital	50	...
Marshallstown, 450—New Castle		
Hope Farm Sanatorium (T.B.)	60	...
Wilmington, 110,168—New Castle		
Delaware Hospital*	185	125
Homeopathic Hospital*	90	47
Dr. J. J. Jones' Private Hospital	30	...
Physicians' and Surgeons' Hosp.	60	50
St. Michael's Day Nursery and Hospital for Babies	27	...
No General Hospitals of less than 25 beds	...	...
Totals	502	222

In Delaware the following two counties have no hospitals: Kent and Sussex.

DISTRICT OF COLUMBIA

	Total Beds	Av. Beds In Use
Washington, 437,414		
Central Disp. and Emerg. Hosp.*	150	127
Children's Hospital of D. C.†	155	82
Columbia Hospital for Women*	132	78
Eastern Disp. and Casualty Hosp.*	75	52
Episcopal Eye, Ear and Throat Hospital*	80	40
Freedmen's Hospital†	248	232
Garfield Memorial Hospital*	250	210
Georgetown University Hospital*	267	156
George Washington Univ. Hosp.*	105	78
National Homeopathic Hospital	50	45
Providence Hospital*	350	280
Sibley Memorial Hospital*	175	155
Tuberculosis Hospital of the District of Columbia (T.B.)†	145	110
Washington Asylum Hospital*	260	169
Washington Sanitarium and Hosp.	150	90
Four General Hospitals of less than 25 beds	65	15
Totals	2,657	1,919

The District of Columbia is considered as being a single district, which has the above-indicated hospitals.

FLORIDA

	Total Beds	Av. Beds In Use
Clearwater, 2,427—Pinellas		
Morton F. Plant Endowed Hosp.	30	...
Daytona, 5,445—Volusia		
Dr. Bohannon's Hosp. and Sanit.	30	15
Jacksonville, 91,543—Duval		
Catherine Lee Hospital	36	...
Duval County Hospital	100	65
Riverside Hospital	30	...
St. Luke's Hospital*	175	84
St. Vincent's Hospital	62	38
Key West, 18,746—Monroe		
Louise Maloney Hospital	35	...
St. Joseph Hospital	25	...
Lake City, 2,941—Columbia		
Lake Shore Hospital	25	10
Lakeland, 7,824—Polk		
Lakeview Sanatorium	25	...
Piedmont Hospital	50	...
Miami, 29,549—Dade		
Miami City Hospital	40	...
New Smyrna, 1,121—Volusia		
Perrine Sanatorium	33	16
Ocala, 4,370—Marion		
Marion County Hospital	30	...
Orlando, 9,257—Orange		
Florida Sanitarium	85	50
Orange General Hospital	110	50
Pensacola, 31,035—Escambia		
Pensacola Hospital*	100	80
St. Augustine, 6,192—St. Johns		
East Coast Hospital	65	...
Flagler Hospital	100	...
St. Petersburg, 14,237—Pinellas		
City Hospital	35	13
Faith Hospital	37	...
Tampa, 51,608—Hillsborough		
Bayside Hospital	32	25
Centro Asturiano Sanatorium	50	...
Clara Frye Hospital	35	26
Gordon Keller Memorial Hospital	70	54
Plant Park Infirmary	50	30
Sanatorio del Centro Espanol	44	10
West Palm Beach, 6,859—Palm Beach		
Good Samaritan Hospital	50	...
Eight General Hospitals of less than 25 beds	124	17
Totals	1,662	583

In Florida the following forty-one counties have no hospitals: Alachua, Baker, Bay, Bradford, Brevard, Broward, Calhoun, Citrus, Clay, Desoto, Flagler, Franklin, Gadsden, Hamilton, Hernando, Holmes, Jackson, Jefferson, Lafayette, Lake, Lee, Leon, Levy, Liberty, Madison, Manatee, Nassau, Okaloosa, Okeechobee, Osceola, Pasco, Putnam, St. Lucie, Santa Rosa, Seminole, Sumter, Suwanee, Taylor, Wakulla, Walton, Washington.

GEORGIA

	Total Beds	Av. Beds In Use
Albany, 11,555—Dougherty		
Phoebe Putney Memorial Hospital	75	...
Americus, 9,016—Sumter		
Americus and Sumter Co. Hosp.	30	15
Athens, 16,748—Clarke		
St. Mary's Hospital	50	30
Atlanta, 200,616—Fulton		
Atlanta Hospital	27	...
Battle Hill Sanatorium (T.B.)	200	150
Davis-Fischer Sanatorium*	76	70
Georgia Baptist Hospital*	165	115
Georgian Hospital	25	...
Grady Memorial Hospital*	200	185
MacVicar Hospital of Spelman Seminary	35	18
Dr. Noble's Private Infirmary	25	25
Piedmont Sanatorium*	51	50
Pine Ridge Sanitarium	50	...
St. Joseph's Infirmary*	125	...
St. Mary's Hospital	35	8
Wesley Memorial Hospital	56	46
Augusta, 52,548—Richmond		
University Hospital*	250	165
Wilhenford Hospital	35	25
Bainbridge, 4,792—Decatur		
Bainbridge Hospital	50	22
Riverside Hospital	30	20
Brunswick, 14,413—Glynn		
Brunswick Hospital	45	15
Columbus, 31,125—Muscogee		
Columbus City Hospital	85	55
Decatur, 6,150—DeKalb		
Scottish Rite Hospital for Crippled Children	52	50
Donalsonville, 747—Decatur		
Chason's Hospital	50	15
Eastman, 2,555—Dodge		
Eastman Hospital	50	...
Gainesville, 6,272—Hall		
Downey Hospital	52	30
Griffin, 9,946—Spalding		
Griffin Hospital	40	...
La Grange, 17,858—Troup		
Dunson Hospital	60	20
Macon, 52,995—Bibb		
Macon Hospital*	165	102
Reeves, 70—Gordon		
The Farm Sanitarium	30	20
Rome, 13,252—Floyd		
Harbin Hospital	75	30
Sandersville, 2,641—Washington		
Rawling's Sanitarium	100	61
Savannah, 83,252—Chatham		
Charity Hospital	30	...
Georgia Infirmary	40	...
Oglethorpe Sanitarium	35	26
Park View Sanitarium	75	75
Savannah Hospital	75	40
St. Joseph's Hospital	125	75
Telfair Hospital	50	35
Thomasville, 8,196—Thomas		
Thomasville City Hospital	40	15
Valdosta, 10,720—Lowndes		
Drs. Little & Griffin Private Hosp.	28	25
Waycross, 15,800—Ware		
Atlantic Coast Line Hospital	70	28
Fifteen General Hospitals of less than 25 beds	256	31
Totals	3,228	1,682

In Georgia the following 124 counties have no hospitals: Appling, Bacon, Baker, Baldwin, Banks, Barrow, Bryan, Ben Hill, Bleckley, Brooks, Bryan, Bulloch, Burke, Butts, Calhoun, Camden, Campbell, Candler, Carroll, Catoosa, Charlton, Chattahoochee, Chattooga, Cherokee, Clay, Clayton, Clinch, Colquitt, Columbia, Coweta, Crawford, Dade, Dawson, Dooly, Douglas, Early, Echols, Effingham, Elbert, Evans, Fannin Fayette, Forsyth, Franklin, Gilmer, Glascock, Grady, Greene, Gwinnett, Habersham, Hancock, Haralson, Harris, Hart, Heard, Henry, Houston, Jackson, Jasper, Jefferson, Jenkins, Johnson, Jones, Laurens, Lee, Liberty, Lincoln, Long, Lumpkin, McDuffie, McIntosh, Macon, Madison, Marion, Meriweather, Miller, Milton, Mitchell, Monroe, Montgomery, Morgan, Murray, Newton, Oconee, Oglethorpe, Paulding, Pickens, Pierce, Pike, Polk, Pulaski, Putnam, Quitman, Rabun, Randolph, Rochdale, Schley, Screvens, Stevens, Stewart, Talbot, Taliferro, Tattnall, Taylor, Telfair, Terrell, Tift, Toombs, Towns, Turner, Twiggs, Union, Upson, Walker, Walton, Warren, Wayne, Wilkes, Webster, Wheeler, White, Whitefield, Wilcox, Wilkinson Worth.

IDAHO

	Total Beds	Av. Beds In Use
Boise, 21,393—Ada		
St. Alphonsus Hospital*	130	90
St. Luke's Hospital	60	50
Coeur D'Alene, 6,472—Kootenai		
Coeur D'Alene Hospital	40	10
Idaho Falls, 8,664—Bonneville		
Spencer Hospital	30	...
Lewiston, 6,674—Nez Perce		
St. Joseph's Hospital	50	40
White Hospital	32	21

	Total Beds	Av. Beds In Use
Moscow, 3,836—Latah		
Gritman Hospital	30	10
Mercy Hospital	40	...
Pocatello, 14,981—Bannock		
Pocatello General Hospital	52	35
St. Anthony's Mercy Hospital	40	40
Sandpoint, 2,676—Bonner		
City Hospital	30	20
St. Maries, 1,962—Benewah		
St. Maries Hospital	35	...
Twin Falls, 5,258—Twin Falls		
Boyd Hospital	50	22
Twin Falls County Hospital	50	35
Wallace, 2,016—Shoshone		
Providence Hospital	90	...
Wallace Hospital	65	51
Eleven General Hospitals of less than 25 beds	180	30
Totals	1,094	657

In Idaho the following twenty-six counties have no hospitals: Adams, Bingham, Blaine, Boise, Boundary, Butte, Camas, Cassia, Clearwater, Custer, Elmore, Franklin, Fremont, Gem, Gooding, Idaho, Jefferson, Lemhi, Minidoka, Oneida, Owyhee, Payette, Power, Teton, Valley, Washington.

ILLINOIS

	Total Beds	Av. Beds In Use
Altos, 24,714—Madison		
St. Joseph's Hospital	50	35
Anna, 2,809—Union		
Hale Sanatorium	30	6
Argo, 196—Cook		
Argo Hospital	30	...
Aurora, 36,165—Kane		
Aurora Hospital Association	90	43
St. Charles Hospital	75	5
St. Joseph's Infirmary	30	...
Belleville, 24,741—St. Clair		
St. Clair County Home and Isolation Hospital	300	...
St. Elizabeth's Hospital	100	...
St. Vincent's Hospital	100	...
Belvidere, 7,769—Boone		
St. Joseph's Hospital	40	...
Bloomington, 28,725—McLean		
Brokaw Hospital	85	...
Kelso Sanitarium	50	...
St. Joseph's Hospital	150	...
Blue Island, 11,456—Cook		
St. Francis' Hospital	83	55
Brooks, 2,139—Clinton		
St. Joseph's Hospital	31	...
Cairo, 15,203—Alexander		
St. Mary's Infirmary	77	...
Canton, 10,928—Fulton		
Graham Hospital	30	...
Carbondale, 6,347—Jackson		
Holden Hospital	30	...
Centralia, 11,320—Marion		
St. Mary's Hospital	40	...
Champaign, 15,873—Champaign		
Julia F. Burnham Hospital	60	30
Chenoa, 1,609—Livingston		
M. A. Montgomery Memorial Sanit.	30	20
Chicago, 2,701,705—Cook		
Alexian Brothers Hospital*	285	215
American Hospital and Training School for Nurses	125	85
Annie W. Durand Hospital†	60	44
Auburn Park Hospital	40	30
Augustana Hospital*	200	167
Burnside Hospital	50	30
Chicago Daily News Fresh-Air Fund Sanitarium (T.B.)	200	...
Chicago Eye, Ear, Nose and Throat College Hospital	30	20
Chicago Fresh-Air Hosp. (T.B.)	104	100
Chicago General Hospital	60	40
Chicago Lying-In Hosp. & Disp.†	240	100
Chicago Municipal Tuberculosis Sanitarium	900	740
Chicago Policlinic and Hospital*	55	...
Chicago Union Hospital	60	51
Children's Memorial Hospital†	175	135
Columbus Extension Hospital	100	75
Columbus Hospital	150	120
Cook County Hospital*	2,700	1,850
Cook County Tuberculosis Hosp.	250	...
Eastern Emergency Hospital	30	...
Englewood Hospital*	150	125
Evangelical Deaconess Hospital	45	38
Frances E. Willard National Temperance Hospital	110	85
Garfield Park Hospital	60	40
German Evangelical Deaconess Home and Hospital	58	58
Grant Hospital of Chicago*	138	110
Hahnemann Hospital of the City of Chicago	140	92
Henrotin Memorial Hospital*	70	65
Hosp. of St. Anthony de Padua*	154	130
Illinois Central Hospital*	125	90
Illinois Charitable Eye and Ear Infirmary	175	170
Illinois Steel Company Hospital	33	30
Isolation Hospital	35	6
Jefferson Park Hospital	100	75
Lakeside Hospital	100	70
Lake View Hospital	50	50
Lawndale Municipal Hospital	100	50
Mary Thompson Hospital of Chicago Women and Children*	75	60
Mercy Hospital*	375	360
Michael Reese Hospital*	452	339
Mt. Sinai Hospital	77	45
Municipal Contagious Dis. Hosp.	200	167
North Chicago Hospital	85	75
Norwegian American Hospital*	125	85
Norwegian Lutheran Deaconess Hospital*	100	90
Park Avenue Hospital	70	45
Passavant Memorial Hospital	80	72
People's Hospital and Training School for Nurses	50	37
Post Graduate Hospital*	86	68
Presbyterian Hospital*	436	362
Provident Hospital and Training School*	65	48
Pullman Emergency Hospital	35	25
Ravenswood Hospital*	42	35
Robert Burns Hospital	45	45
Sheridan Park Hospital	30	...
South Chicago Hospital	42	30
South Shore Hospital*	110	30
St. Ann's Hospital*	100	7
St. Bernard's Hospital*	300	163
St. Elizabeth's Hospital*	225	135
St. Joseph's Hospital*	175	145
St. Luke's Hospital*	400	320
St. Mary of Nazareth Hospital*	210	...
St. Vincent's Infant and Maternity Hospital	300	100
Streeter Hospital	30	18
Swedish Covenant Hospital and Home of Mercy	110	...
University Hospital*	90	65
Washington Boulevard Hospital*	85	75
Washington Park Hospital*	116	90
Wesley Memorial Hospital*	275	195
West Side Hospital*	155	112
Chicago Heights, 16,033—Cook		
St. James Hospital	60	...
Clinton, 5,180—DeWitt		
Dr. John Warner Hospital	25	...
Collinsville, 9,735—Madison		
Harrison Tuberculosis Colony	30	22
Danville, 33,795—Vermilion		
Lake View Hospital	100	63
St. Elizabeth's Hospital	125	100
Vermilion County Indr. (T.B.)	135	...
Decatur, 43,818—Macon		
Decatur and Macon County Hosp.	125	60
St. Mary's Hospital	90	5
Wabash Employees' Hospital	50	28
Dixon, 8,191—Lee		
Dixon Public Hospital	40	30
East St. Louis, 66,766—St. Clair		
Contagious Hospital	30	...
Evangelical Deaconess Hospital	55	...
St. Mary's Hospital	125	6
Effingham, 4,824—Effingham		
St. Anthony's Hospital	53	...
Elgin, 27,454—Kane		
Sherman Hospital	88	...
St. Joseph's Hospital	60	...
Elmhurst, 4,884—DuPage		
Crane Sanitarium	40	35
Evanston, 37,234—Cook		
Evanston Hospital*	225	79
St. Francis Hospital*	125	...
Freeport, 19,862—Stephenson		
Freeport General Hospital	45	...
Globe Hospital	30	22
St. Francis Hospital	110	60
Galesburg, 22,934—Knox		
Galesburg Hospital	100	53
St. Mary's Hospital	75	60
Geneva, 2,885—Kane		
Colonial Hospital	35	21
Granite City, 14,747—Madison		
St. Elizabeth Hospital	50	...
Harvard, 3,294—McHenry		
Cottage Hospital	50	10
Herrin, 10,896—Williamson		
Baker-Gardiner Hospital	42	...
Herrin Hospital	40	30
Highland, 2,673—Madison		
St. Joseph's Hospital	50	...
Hinsdale, 2,481—DuPage		
Hinsdale Sanatorium	150	97
Jacksonville, 15,713—Morgan		
Our Savior's Hospital	41	35
Passavant Memorial Hospital	77	35
Joliet, 36,373—Will		
Silver Cross Hospital	100	41
St. Joseph's Hospital	100	...
Kankakee, 13,721—Kankakee		
Emergency Hospital	40	3
Kenilworth, 1,152—Cook		
Kenilworth Sanitarium	30	22
Kewanee, 16,638—Henry		
St. Francis Hospital	36	...
LaSalle, 13,058—LaSalle		
St. Mary's Hospital	110	68
Lawrenceville, 3,235—Lawrence		
Lawrenceville Hospital	25	...
Lincoln, 11,252—Logan		
Evangelical Deaconess Home and Hospital	50	35
St. Clara's Hospital	64	...
Litchfield, 6,215—Montgomery		
St. Francis Hospital	110	6
Macomb, 6,714—McDonough		
Holmes Hospital	30	...
Marietta Phelps Hospital	25	18
St. Francis Hospital	40	25
Maxwell, 20—Sangamon		
Peoria County Hospital	45	...
Mellen, 20,734—Rock Island		
Lutheran Hospital	80	60
Molino Public Hospital	126	90
Tri-City Sanitarium	50	20
Monmouth, 6,116—Warren		
Monmouth Hospital	35	30
Mt. Vernon, 9,315—Jefferson		
Egyptian Hospital	25	...
Murphysboro, 10,411—Jackson		
St. Andrew's Hospital	40	40
Naperville, 2,836—DuPage		
Edward Sanatorium (T.B.)	72	...
Normal, 5,142—McLean		
Brokaw Hospital	85	60
Fairview Sanatorium (T.B.)	...	35
Oak Forest (P.O. Only)—Cook		
Cook County Infirmary (T.B.)	700	...
Oak Park, 39,273—Cook		
Oak Park Hospital*	100	60
West Suburban Hospital*	150	102
Olney, 4,491—Richland		
Olney Hospital	60	48
Olney Sanitarium	25	10
Ottawa, 10,816—LaSalle		
LaSalle Co. Tuberculosis Sanit.	54	54
Ottawa Tuberculosis Colony	60	32
Ryburn Memorial Hospital	60	19
Paris, 8,122—Christian		
Huber Memorial Hospital	50	35
Paris, 7,982—Edgar		
Paris Hospital	25	15
Pekin, 2,086—Tazewell		
Pekin Public Hospital	30	20
Peoria, 76,121—Peoria		
Isolation Hospital	30	...
John C. Proctor Hospital	110	94
Methodist Hosp. of Central Illinois	110	50
Peoria Municipal Tubere. Sanit.	50	35
St. Francis Hospital	300	150
Pere, 8,600—LaSalle		
People's Hospital	60	...
Pontiac, 6,664—Livingston		
St. James Hospital	70	...
Quincy, 36,764—Adams		
Blessing Hospital	100	60
St. Mary's Hospital	180	...
Red Bud, 1,340—Randolph		
St. Clement's Hospital	40	...
Riverton, 1,911—Sangamon		
St. John's Sanitarium (T.B.)	80	...
Rochelle, 3,310—Ogle		
Lincoln Hospital	46	2
Rockford, 65,651—Winnebago		
Rockford Hospital	125	85
Rockford Municipal Sanit. (T.B.)	38	38
St. Anthony's Hospital	150	...
Swedish American Hospital	80	50
Rock Island, 35,177—Rock Island		
St. Anthony's Hospital	150	120
Springfield, 59,183—Sangamon		
David Prince Sanitarium	75	50
The Palmer Tubere. Sanatoria	42	...
Springfield Hospital	100	...
St. John's Hospital	400	290
Spring Valley, 6,493—Bureau		
St. Margaret's Hospital	50	40
Staunton, 4,102—Macoupin		
Public Hospital of the City of Sterling	38	25
Streator, 14,775—LaSalle		
St. Mary's Hospital	100	75
Taylorville, 5,956—Christian		
St. Vincent's Hospital	50	45
Wabash, 2,478—Iroquois		
The Iroquois Hospital	28	17
Waukegan, 19,226—Lake		
Lake County General Hosp. (T.B.)	60	36
Victory Memorial Hospital	38	34
Winfield, 121—DuPage		
Chicago-Winfield Tubere. Sanit.	110	78
Fifty-Six General Hospitals of less than 25 beds	900	234
Totals	22,993	13,634

In Illinois the following forty-one counties have no hospitals: Bond, Brown, Calhoun, Carroll, Cass, Clark, Clay, Cumberland, Edwards, Fayette, Ford, Gallatin, Greene, Hamilton, Hardin, Henderson, Jasper, Jersey, Jo Daviess, Johnson, Kendall, Macoupin, Marshall, Mason, Menard, Mercer, Monroe, Moultrie, Perry, Piatt, Pike, Pope, Pulaski, Putnam, Schuyler, Scott, Stark, Wabash, Washington, Wayne, White.

INDIANA

	Total Beds	Av. Beds In Use
Anderson, 23,782—Madison		
Madison County Infirmary	75	...
St. John's Hospital	75	...
Bedford, 6,943—Lawrence		
Bedford City Hospital	30	...
Bloomington, 11,592—Monroe		
Bloomington Hospital	35	27

	Total Beds	Av. Beds In Use
Bluffton, 539—Wells		
Wells County Hospital	25	15
Bowling Green, 536—Clay		
Clay County Infirmary	50	...
Columbus, 8,900—Bartholomew		
Bartholomew County Hospital	25	16
Connersville, 9,991—Fayette		
Fayette Memorial Hospital	35	26
Elkhart, 34,277—Elkhart		
Elkhart General Hospital	54	42
Evansville, 85,264—Vanderburg		
Boehne Camp (T.B.)	65	40
City Isolation Hospital	79	...
Hayden Hospital	50	25
Protestant Deaconess Hospital	65	50
St. Mary's Hospital	100	75
Walker Hospital	72	50
Ft. Wayne, 86,549—Allen		
Ft. Wayne Lutheran Hospital	125	110
Irene Byron Tuberculosis San't.	60	60
St. Joseph's Hospital*	165	150
Garrett, 4,700—DeKalb		
Sacred Heart Hospital	45	...
Gary, 55,544—Lake		
Gary Hospital*	120	45
St. Antonio Hospital	50	35
St. Mary's Mercy Hospital	140	...
Goshen, 5,325—Elkhart		
Goshen Hospital	25	10
Hammond, 3,004—Lake		
St. Margaret's Hospital	135	...
Huntington, 14,000—Huntington		
Huntington County Hospital	30	25
Indianapolis, 314,194—Marion		
Indianapolis City Hospital*	300	230
Joseph Eastman Hospital	40	20
Methodist Episcopal Hospital*	273	260
St. Jacinta Sanitarium	40	...
Neuronhurst (N. and M.)	36	...
"Norways" Sanatorium	30	20
Protestant Deaconess Hospital	125	80
Reed Hospital for Babies	35	20
Robt. W. Long Hospital*	115	102
St. Francis Hospital	100	28
St. Vincent's Hospital*	150	130
Kokomo, 30,067—Howard		
Good Samaritan Hospital	40	18
Lafayette, 22,486—Tippecanoe		
Lafayette Home Hospital	80	60
St. Elizabeth's Hospital	175	110
Wabash Valley Sanitarium	65	60
LaPorte, 15,189—LaPorte		
Holy Family Hospital	50	43
Lebanon, 6,257—Boone		
Williams Hospital	30	11
Witham Memorial Hospital	35	10
Linton, 5,000—Greene		
Freeman City Hospital	25	8
Logansport, 21,820—Cass		
St. Joseph's Hospital	60	60
Madison, 6,711—Jefferson		
Dempy's Sanitarium	25	...
King's Daughter's Hospital	25	12
Marion, 22,747—Grant		
Grant County Hospital	40	21
Martinsville, 4,000—Morgan		
Barnard's Sanitarium	30	25
Mann Lawn Mineral Springs Sanit.	110	...
National Sanitarium	70	...
Michigan City, 19,457—LaPorte		
St. Anthony's Hospital	80	30
Mishawaka, 15,195—St. Joseph		
St. Joseph's Hospital	90	65
Muncie, 35,874—Delaware		
Muncie Home Hospital	60	50
New Albany, 22,992—Floyd		
St. Edward's Hospital	102	62
Newcastle, 14,488—Henry		
Miller Hospital	31	20
Noblesville, 4,756—Hamilton		
Hamilton County Hospital	25	9
Oaklandon, 353—Marion		
Sunnyside Sanatorium	78	76
Peru, 12,561—Miami		
Miami County Hospital	30	12
Wabash R. R. Employees' Hosp.	50	25
Princeton, 7,132—Gibson		
Methodist Hospital	25	15
Richmond, 30,736—Wayne		
Reid Memorial Hospital	65	30
Rome City, 486—Noble		
Kneipp Sanitarium	200	175
South Bend, 70,983—St. Joseph		
Epworth Hospital	75	60
Healthwin Hospital (T.B.)	56	50
St. Joseph Hospital	52	40
Sullivan, 4,486—Sullivan		
Sullivan County Hospital	35	18
Terre Haute, 65,914—Vigo		
St. Anthony's Hospital*	150	125
Union Hospital	75	65
Vincennes, 17,216—Knox		
Bowers-Loacher Sanitarium	25	20
Good Samaritan Hospital	50	35
Knox County Infirmary	32	...
Washington, 8,705—Daviess		
Daviess County Hospital	25	15
Winchester, 4,021—Randolph		
Randolph County Hospital	25	(New)
Thirty-Three General Hospitals of less than 25 beds	533	130
Totals	5,859	3,143

In Indiana the following thirty-nine counties have no hospitals: Adams, Benton, Blackford, Brown, Carroll, Crawford, Dearborn, Decatur, Dubois, Fountain, Franklin, Hancock, Harrison, Jennings, Johnson, Marshall, Martin, Newton, Ohio, Orange, Parke, Perry, Pike, Posey, Putnam, Ripley, Scott, Shelby, Spencer, Starke, Switzerland, Tipton, Union, Vermillion, Warren, Warrick, Washington, White, Whitley.

IOWA

	Total Beds	Av. Beds In Use
Ahren, 1,234—Plymouth		
Akron Hospital	25	(New)
Alkin, 5,067—Story		
Misers Hospital	35	25
Ames, 6,276—Story		
Iowa State College Hospital	60	20
Mary Greeley Hospital	32	...
Anamosa, 2,281—Jones		
Mercy Hospital	45	...
Atlantic, 5,329—Cass		
Atlantic Hospital	40	25
C. B. Jones Hospital	50	25
Boone, 12,451—Boone		
Eleanor Moore Hospital	35	25
Burlington, 24,057—Des Moines		
Burlington Hospital	65	50
Mercy Hospital	30	...
St. Francis Hospital	45	30
Carroll, 4,254—Carroll		
St. Anthony's Hospital	100	78
Cedar Rapids, 6,510—Linn		
Mercy Hospital	125	70
St. Luke's Hospital	90	71
Centerville, 9,426—Appanoose		
St. Joseph's Hospital	75	...
Charles City, 7,326—Floyd		
Cedar Valley Hospital	40	15
Cherokee, 4,585—Cherokee		
Sioux Valley Hospital	36	25
Clarinda, 4,511—Page		
Kennelworth Hospital	35	12
Clinton, 24,151—Clinton		
Jane Lamb Memorial Hospital	65	35
St. Joseph's Mercy Hospital	75	...
Council Bluffs, 36,162—Pottawattamie		
Jennie Edmundson Memorial Hosp.	75	65
Mercy Hospital	125	75
Creston, 5,182—Howard		
St. Joseph's Mercy Hospital	44	30
Crestone, 5,034—Union		
Cottage Hospital	40	...
Unity Hospital	43	30
Davenport, 56,727—Scott		
Davenport Hospital	42	27
Mercy Hospital*	125	90
Pine Knoll Sanitarium	50	34
St. Luke's Hospital	50	35
St. Robert's Hospital	30	...
Des Moines, 126,468—Polk		
Des Moines Detention Hospital	60	...
Iowa Congregational Hospital	54	31
Iowa Lutheran Hospital	100	80
Iowa Methodist Hospital*	225	170
Mercy Hospital*	250	...
Dubuque, 39,141—Dubuque		
City Detention Hospital	30	...
Finley Hospital	90	...
St. Joseph's Mercy Hospital	220	135
St. Joseph's Sanitarium	300	...
Fairfield, 5,048—Jefferson		
Jefferson County Hospital	35	19
Ft. Dodge, 19,347—Webster		
Booker Lodge Sanatorium (T.B.)	25	15
St. Joseph's Mercy Hospital	50	30
Ft. Madison, 12,606—Lee		
Atchison, Topeka & Santa Fe Railroad Hospital	70	...
Sacred Heart Hospital	35	...
Grinnell, 5,362—Poweshiek		
St. Frances Hospital	50	30
Hampton, 2,982—Franklin		
Lutheran Hospital	75	35
Iowa City, 11,267—Johnson		
Mercy Hospital	100	90
University Hospital*	625	347
Keokuk, 14,423—Lee		
W. C. Graham Protestant Hospital	40	25
St. Joseph's Hospital	100	60
Marshalltown, 15,731—Marshall		
Evangelical Deaconess Home and Hospital	70	44
St. Thomas Mercy Hospital	35	24
Mason City, 28,068—Cerro Gordo		
Park Hospital	75	35
St. Joseph's Mercy Hospital	100	...
Monticello, 2,257—Jones		
John McDonald Hospital	25	25
Muscatine, 16,092—Muscatine		
Bellevue Hospital	37	17
Benjamin Hershey Memo. Hosp.	30	25
Nevada, 2,000—Story		
Iowa Sanitarium	40	25
New Hampton, 2,239—Chickasaw		
St. Joseph's Hospital	35	...
Oskaloosa, 9,427—Mahaska		
Abbott Hospital	40	30
Mahaska Hospital	25	14
Mercy Hospital	35	24
Ottumwa, 23,003—Wapello		
Ottumwa Hospital	55	39
St. Joseph's Hospital	40	...
Perry, 5,042—Dallas		
King's Daughters' Hospital	35	...
Shenandoah, 5,235—Page		
Henry and Catherine Rand Hosp.	30	12
Sioux City, 71,227—Woodbury		
Methodist Hospital	60	...
Lutheran Hospital	75	...
Samaritan Hospital	65	60
Sioux City Maternity Hospital	25	20
St. Joseph's Mercy Hospital*	175	150
St. Vincent's Hospital	114	83
Washington, 4,027—Washington		
Washington County Hospital	25	...
Waterloo, 36,230—Blackhawk		
St. Francis Hospital	100	85
Synodical Presbyterian Hospital	50	35
Waverly, 2,353—Bremer		
St. Joseph's Mercy Hospital	75	42
Forty-Four General Hospitals of less than 25 beds	669	83
Totals	6,388	2,821

In Iowa the following forty-three counties have no hospitals: Adair, Adams, Audubon, Benton, Buchanan, Butler, Calhoun, Cedar, Clarke, Decatur, Dickinson, Fremont, Greene, Grundy, Hamilton, Hancock, Harrison, Henry, Humboldt, Jackson, Jasper, Keokuk, Louisa, Lucas, Lyon, Madison, Marion, Mills, Mitchell, Monona, Montgomery, Osceola, Palo Alto, Pocahontas, Ringgold, Shelby, Tama, Taylor, Van Buren, Warren, Wayne, Winnebago, Worth.

KANSAS

	Total Beds	Av. Beds In Use
Arkansas City, 11,253—Cowley		
Arkansas City Hospital	50	16
Atchison, 12,826—Atchison		
Atchison County Hospital	34	...
Atchison Hospital Association	32	32
Chanute, 10,396—Neosho		
Johnson Hospital	35	...
Coffeyville, 13,423—Montgomery		
Coffeyville Hospital	25	20
South East Kansas Hospital	25	10
Concordia, 4,706—Cloud		
Concordia General Hospital	25	8
St. Joseph's Hospital	75	55
Dodge City, 5,861—Ford		
McCarty Hospital	30	10
Eldorado, 10,000—Butler		
Eldorado Hospital and Training School	50	20
Emporia, 11,273—Lyon		
St. Mary's Hospital	35	...
Ft. Scott, 10,093—Bourbon		
Mercy Hospital	50	31
General, 68—Morton		
Bethesda Hospital	30	15
Great Bend, 4,400—Barton		
St. Rose Hospital	25	16
Halstead, 1,063—Harvey		
Halstead Hospital	60	50
Hays, 3,102—Ellis		
St. Anthony's Hospital	30	...
Herington, 4,065—Dickinson		
Herington Hospital	25	15
Hutchinson, 23,206—Reno		
Hutchinson Methodist Hospital	50	39
Independence, 11,920—Montgomery		
West Side Hospital	60	20
Iola, 6,915—Allen		
St. John's Hospital	30	...
Kansas City, 101,177—Wyandotte		
Bethany Methodist Hospital	125	110
St. Margaret's Hospital*	400	255
Lawrence, 12,456—Douglas		
Lawrence Hospital and Training School	30	11
Leavenworth, 16,913—Leavenworth		
County Hospital	70	65
Nushing Hospital	30	17
St. John's Hospital	75	...
Liberal, 3,612—Seward		
Liberal Hospital	60	20
Manhattan, 7,862—Riley		
Charlotte Swift Memorial Hosp.	25	...
Park View Hospital	30	...
McPherson, 4,595—McPherson		
McPherson Hospital	25	...
Mulvane, 1,022—Sumner		
Atchison, Topeka & Santa Fe Railway Hospital	65	15
Neodesha, 3,943—Wilson		
Wilson County Hospital	60	10
Newton, 9,791—Harvey		
Axtell Hospital	75	55
Bethel Deaconess Hospital	52	36

	Total Beds	Av. Beds In Use
Norton, 2,180—Norton		
Lathrop Hospital	30	12
Ottawa, 9,918—Franklin		
Atchison, Topeka & Santa Fe Railway Hospital	40	25
Parsons, 15,526—Labette		
Mercy Hospital	35	20
Pittsburg, 18,053—Crawford		
Mt. Carmel Hospital	100	55
Rosedale, 7,674—Wyandotte		
Bell Memorial Hospital*	75	56
Sabetha, 2,093—Nemaha		
Sabetha Hospital	40	25
Salina, 15,085—Saline		
St. Barnabas Hospital	30	23
St. John's Hospital	65	...
Topeka, 50,022—Shawnee		
Atchison, Topeka & Santa Fe Railway Hospital	42	18
Christ's Hospital*	70	35
Detention Hospital	40	...
Jane C. Stormont Hospital	54	42
Santa Fe Hospital	100	62
St. Francis Hospital	65	45
Topeka Tuberculosis Hospital	35	...
Waconda Springs (P.O. only)—Mitchell		
Waconda Sanitarium	30	...
Wellington, 7,048—Sumner		
Hatcher Hospital	30	...
Wichita, 72,217—Sedgwick		
Kansas Sanitarium	40	22
St. Francis Hospital*	300	200
Wesley Hospital	40	30
Wichita Hosp. and Train'g School*	150	95
Winfield, 7,933—Cowley		
St. Mary's Hospital	50	40
Winfield Hospital	30	16
Thirty-two General Hospitals of less than 25 beds	490	154
Totals	3,982	1,934

In Kansas the following sixty counties have no hospitals: Anderson, Barber, Chase, Chautauqua, Cherokee, Cheyenne, Clark, Coffey, Comanche, Doniphan, Edwards, Elk, Geary, Gove, Graham, Grant, Gray, Greeley, Greenwood, Hamilton, Haskell, Hodgeman, Jackson, Jefferson, Jewell, Johnson, Kearney, Kiowa, Lane, Lincoln, Linn, Logan, Marshall, Meade, Morton, Ness, Osage, Osborne, Ottawa, Phillips, Pottawatomie, Pratt, Rawlins, Republic, Rooks, Rush, Russell, Scott, Sheridan, Sherman, Smith, Stanton, Stevens, Thomas, Trego, Wabaunsee, Wallace, Washington, Wichita, Woodson.

KENTUCKY

	Total Beds	Av. Beds In Use
Ashland, 14,729—Boyd		
King's Daughters' Hospital	48	30
Berea, 1,040—Madison		
Berea College Hospital	53	...
Robinson Hospital and Clinic	25	20
Bowling Green, 9,630—Warren		
St. Joseph's Hospital	25	...
Corydon, 1,019—Henderson		
Henderson County Sanitarium	65	...
Covington, 57,121—Kenton		
Booth Memorial Hospital	50	32
Covington General Hospital	30	...
Kenton County Infirmary	110	70
St. Elizabeth's Hospital	350*	150
Dayton, 7,846—Campbell		
Speer's Memorial Hospital	100	54
Frankfort, 9,805—Franklin		
King's Daughters' Hospital	30	...
Franklin, 5,184—Simpson		
Southern Kentucky Sanitarium	50	25
Georgetown, 3,983—Scott		
John Graves Ford Memorial Hosp.	26	10
Hazard, 4,340—Perry		
Hazard Industrial Hospital	30	...
Henderson, 12,168—Henderson		
City Hospital	25	...
Eruptive Hospital	40	...
Henderson Co. Tuberculosis Hosp.	25	15
Hopkinsville, 9,686—Christian		
Jennie Stuart Memorial Hosp.	25	15
Jenkins, 1,583—Breathitt		
Barh Hospital	30	16
Jenkins, 4,767—Letcher		
Jenkins Hospital	50	...
Lexington, 41,534—Fayette		
Blue Grass Sanatorium	53	51
Good Samaritan Hospital*	125	84
St. Joseph's Hospital	150	140
Louisville, 234,891—Jefferson		
Casana Sanitarium	40	...
Children's Free Hospital	75	50
German Methodist Deaconess Home and Hospital	75	50
Hazelwood Sanatorium (T.B.)	65	50
Jewish Hospital	90	...
J. N. Norton Memorial Infirmary*	110	85
Louisville City Hospital*	400	270
St. Anthony's Hospital*	90	...
St. Joseph's Infirmary*	100	85
Sis. Mary and Elizabeth Hospital	145	135
Murray, 2,415—Calloway		
Wm. Mason Memorial Hospital	75	(New)
Owensboro, 17,494—Daviess		
Owensboro City Hospital	50	...
Paducah, 24,735—McCracken		
Illinois Central Hospital?	90	60
McCracken Co. Tuberculosis Sanat.	30	...
Riverside Hospital	100	...
Paris, 6,019—Bourbon		
Massie Memorial Hospital	50	30
Ponce Valley, 551—Oldham		
Kentucky Confederate Home Infir.	36	35
Richmond, 3,022—Madison		
Gibson Infirmary	41	...
Waverly Hill * (P.Village)—Jefferson		
Waverly Hill Sanatorium	200	152
Winchester, 7,005—Clark		
Clark County Hospital	35	10
Eighteen General Hospitals of less than 25 beds	297	53
Totals	3,702	1,729

In Kentucky the following eighty-eight counties have no hospitals: Adair, Allen, Anderson, Ballard, Barren, Bath, Bell, Boone, Bracken, Breckenridge, Bullitt, Butler, Caldwell, Carlisle, Carroll, Carter, Casey, Clay, Clinton, Crittenden, Cumberland, Edmonson, Elliott, Estill, Fleming, Floyd, Fulton, Gallatin, Garrard, Grant, Graves, Grayson, Green, Greenu, Hancock, Hardin, Harlan, Hart, Henry, Hickman, Hopkins, Jackson, Jessamine, Johnson, Knott, Knox, Larue, Laurel, Lee, Leslie, Lewis, Lincoln, Livingston, Logan, Lyon, McCreary, McLean, Magoffin, Marshall, Martin, Meade, Metcalf, Monroe, Montgomery, Morgan, Muhlenberg, Nelson, Nicholas, Ohio, Owen, Owsley, Pendleton, Pike, Powell, Robertson, Rockcastle, Rowan, Russell, Spencer, Taylor, Todd, Trigg, Trimble, Union, Washington, Wayne, Webster, Wolfe.

LOUISIANA

	Total Beds	Av. Beds In Use
Abbeville, 3,461—Vermilion		
Vermilion Sanitarium	25	15
Alexandria, 17,510—Rapides		
Baptist Hospital	60	29
Baton Rouge, 21,782—East Baton Rouge		
Baton Rouge Sanitarium	27	...
Bogalusa, 5,345—Washington		
Bogalusa Hospital	65	...
New Fenwick Sanitarium	38	...
Greenwood, 250—Caddo		
Pine Prison (T.B.)	75	25
Hygeia (P.O. only) St. Tammany		
Camp Hygeia (T.B.)	50	35
Lake Charles, 13,899—Calcasieu		
St. Patrick Sanitarium	35	...
Shreveport, 43,874—Caddo		
St. Francis Sanitarium	130	100
New Orleans, 387,408—Orleans		
Charity Hospital*	1,219	833
Eye, Ear, Nose and Throat Hosp.†	30	27
Flint-Goodrige Hospital	60	34
French Hospital	65	30
Hotel Dieu Hospital	164	125
Illinois Central R. R. Hospital*	75	35
Isolation Hospital	75	...
New Orleans Dispensary and Hospital for Women and Children	38	35
Presbyterian Hospital of New Orleans	104	91
Providence Hospital and Training School for Nurses	25	...
Small-Pox Hospital	40	...
Touro Infirmary	270	235
Patterson, 2,535—St. Mary		
St. Mary's Hospital	30	21
Shreveport, 43,874—Caddo		
Highland Sanitarium	60	35
North Louisiana Sanitarium	75	50
T. E. Schumert Memorial Sanit.*	250	...
Shreveport Charity Hospital	250	166
Twelve General Hospitals of less than 25 beds	210	63
Totals	3,550	1,985

In Louisiana the following forty-eight counties have no hospitals: Allen, Ascension, Assumption, Beauregard, Bienville, Bossier, Caldwell, Cameron, Catahoula, Claiborne, Concordia, De Soto, East Carroll, East Feliciana, Evangeline, Franklin, Grant, Iberville, Jackson, Jefferson, Jefferson Davis, Lafourche, La Salle, Lincoln, Livingston, Madison, Morehouse, Natchitoches, Pleaquemines, Pointe Coupee, Red River, Richland, Sabine, St. Bernard, St. Charles, St. Helena, St. James, St. John the Baptist, St. Martin, Tensas, Terrebonne, Union, Vernon, Webster, W. Baton Rouge, West Carroll, West Feliciana, Winn.

MAINE

	Total Beds	Av. Beds In Use
Augusta, 14,114, Kennebec		
Augusta General Hospital	93	39
Bangor, 25,848—Penobscot		
Eastern Maine General Hospital*	120	100
Bar Harbor, 1,121—Hancock		
Bar Harbor Med. and Surg. Hosp.	35	10
Bath, 14,731—Sagadahoc		
Bath City Hospital	50	30
Biddeford, 18,008—York		
Trull Hospital	35	...
Webber Hospital	50	35
Eagle Lake, 700—Aroostook		
Northern Maine General Hospital	32	15
East Parsonfield, 300—York		
Maple Crest Sanatorium (T.B.)	35	25
Fairfield, 2,747—Somerset		
Central Maine Sanatorium	157	102
Greenville Junction, 320—Piscataquis		
Charles A. Dean Hospital	25	12
Hebron, 400—Oxford		
Western Maine Sanatorium	107	102
Houlton, 6,191—Aroostook		
Aroostook Hospital	30	...
Madigan Memorial Hospital	30	14
Lewiston, 31,791—Androscoggin		
Central Maine General Hospital*	114	73
St. Mary's General Hospital	140	95
Norridgewock, 1,700—Somerset		
Norridgewock Sanatorium	35	...
Portland, 69,272—Cumberland		
Children's Hospital	70	55
Dr. Cousin's Private Hospital	50	34
Dr. File's Private Hospital	32	27
Isolation Hospital	40	...
Maine Eye and Ear Infirmary*	100	50
Maine General Hospital*	160	113
Portland City Hospital	70	...
Presque Isle, 3,433—Aroostook		
Presque Isle General Hospital	50	30
Rockland, 8,150—Knox		
Knox County General Hospital	31	20
Silsby Hospital	26	15
Waterville, 13,351—Kennebec		
Sister's Hospital	38	25
Fourteen General Hospitals of less than 25 beds	217	80
Totals	1,972	1,087

In Maine the following two counties have no hospitals: Franklin and Washington.

MARYLAND

	Total Beds	Av. Beds In Use
Annapolis, 11,214—Anne Arundel		
Annapolis Emergency Hospital	43	30
Baltimore, 804,695—Baltimore City		
Baltimore City Jail Hospital	30	20
Baltimore Eye, Ear and Throat Charity Hospital*	40	...
Bay View Asylum*	1,800	1,102
Biedler-Sollman Sanatorium	120	...
Children's Hospital	55	40
Church Home and Infirmary*	175	143
Franklin Square Hospital*	112	60
Hahnemann General Hospital	75	...
Johns Hopkins Hospital*	178	132
Hospital for Women of Maryland	126	95
Howard A. Kelley Hospital	35	30
Johns Hopkins Hospital*	635	471
Maryland General Hospital*	300	180
Mercy Hospital*	300	240
Presbyterian Eye, Ear and Throat Charity Hospital	60	12
Provident Hospital and Free Dispensary	50	28
Robt. Garrett Hosp. for Children	31	28
South Baltimore General Hosp.*	75	55
Southern Hospital	52	...
St. Agnes Hospital*	250	154
St. Joseph's Hospital*	275	225
St. Vincent's Infant Asylum and Maternity Hospital	25	...
Sydenham Hospital	50	26
Union Memorial Hospital*	112	79
University of Maryland Hospital*	270	240
University of Maryland Lying-In Hospital	33	...
Cambridge, 7,457—Dorchester		
United Charities Hospital	70	35
Crisfield, 4,110—Somerset		
General and Marine Hospital	30	...
Cumberland, 29,837—Allegany		
Allegany Hospital for the Sisters of Charity	100	80
Western Maryland Hospital	75	60
Easton, 3,442—Talbot		
Easton Emergency Hospital	50	25
Elkton, 2,600—Cecil		
Union Hospital	30	20
Forest Glen, 125—Montgomery		
Frederick Hospital	70	...
Frostburg, 6,017—Allegany		
Miners Hospital	50	...
Hagerstown, 28,066—Washington		
Washington County Hospital	84	50
Havre de Grace, 4,376—Harford		
Havre de Grace Hospital	50	28
Hillsdale,[1]—Baltimore		
James L. Kernan Hospital and Industrial School for Crippled Children	75	...
Mt. Airy, 625—Carroll		
Robert Garrett Sanitarium	26	...
Mt. Wilson [2]—Baltimore		
Thomas Wilson Sanitarium[3]	100	...

2. Small Village, postoffice is Valley Station.

3. Suburb of Baltimore.

V. 192

	Total Beds	Av. Beds In Use
Salisbury, 7,802—Wicomico		
Peninsula General Hospital	60	45
Pine Bluff Sanatorium (T.B.)	30	...
Towson, 3,565—Baltimore		
Rockwood Sanatorium (T.B.)	110	100
Five General Hospitals of less than 25 beds	104	29
Totals	6,374	3,900

In Maryland the following eleven counties have no hospitals: Calvert, Caroline, Charles, Garrett, Howard, Kent, Montgomery, Prince Georges, Queen Annes, Saint Mary's, Worcester.

MASSACHUSETTS

	Total Beds	Av. Beds In Use
Andover, 5,230—Essex		
Isham Infirmary	40	...
Arlington, 18,665—Middlesex		
Symmes Arlington Hospital	50	20
Attleboro, 19,731—Bristol		
Attleboro Sanitarium	75	25
Bristol Co. Tuberculosis Hospital	60	46
Sturdy Memorial Hospital	35	30
Beverly, 22,561—Essex		
Beverly Hospital	60	46
Boston, 747,923—Suffolk		
Beth Israel Hospital	50	35
Boothby Surgical Hospital	50	...
Boston City Hospital*	1,302	763
Boston Consumptives' Hospital (T.B.)†	420	300
Boston Dispensary and Hospital for Children†	30	25
Boston Floating Hospital†	200	100
Boston Lying-In Hospital†	54	40
Carney Hospital*	161	...
Children's Hospital†	150	136
Collis P. Huntington Memorial Hospital†	25	15
Eliot Hospital	36	30
Emerson Hospital	50	40
Faulkner Hospital	75	66
Fenway Hospital	30	...
Hart Private Hospital	30	30
Infants' Hospital†	50	45
Long Island Hospital	450	340
McLeod Hospital	25	15
Massachusetts Charitable Eye and Ear Infirmary†	210	113
Massachusetts General Hospital*	345	313
Massachusetts Homeopathic Hospital*	550	406
New England Baptist Hospital	55	52
New England Deaconess Hospital	95	87
New England Hospital for Women and Children*	178	82
Peter Bent Brigham Hospital*	225	185
Scobey Hospital	30	25
St. Elizabeth's Hospital*	200	131
St. Margaret's Maternity Hospital	30	...
St. Mary's Infant Asylum and Lying-In Hospital†	250	250
Talitha Cumi Maternity Home and Hospital	35	25
Brockton, 66,189—Plymouth		
Brockton Hospital*	150	64
Goddard Hospital	36	25
Brookline, 37,748—Norfolk		
Board of Health Hospital	60	...
Brooke Hospital	45	...
Corey Hill Hospital	34	28
Free Hospital for Women†	85	65
Summit Hospital	30	25
Cambridge, 109,456—Middlesex		
Cambridge City Hospital	50	47
Cambridge Hospital*	100	70
Cambridge Relief Hospital	25	...
Cambridge Tuberculosis Hospital	150	...
Charlesgate Hospital	50	...
Chester Hospital	51	...
Chelsea, 43,184—Suffolk		
Chelsea Memorial Hospital*	75	55
Clinton, 12,984—Worcester		
Clinton Hospital	77	60
Concord, 6,461—Middlesex		
Deaconess Hospital	25	16
Dartmouth, 5,330—Bristol		
Crary Hospital	25	...
East Bridgewater, 3,363—Plymouth		
Millet Sanatorium (T.B.)	25	20
Everett, 48,166—Middlesex		
Whidden Memorial Hospital	30	22
Fall River, 120,485—Bristol		
Bay View Hospital (T.B.)	65	63
Fall River City Hospital*	125	65
St. Ann's Hospital	150	...
Truesdale Hospital	60	35
Union Hospital*	150	79
Fitchburg, 41,015—Worcester		
Burbank Hospital*	125	80
Burbank Hospital (Tuberculosis Sanatorium)	20	...
Framingham, 16,737—Middlesex		
Framingham Hospital	100	65
Union Avenue Hospital	40	35
Gardner, 16,996—Worcester		
Henry Heywood Memorial Hosp.	45	36
Gloucester, 23,947—Essex		
Addison Gilbert Hospital	30	17
Greenfield, 15,462—Franklin		
Franklin County Public Hospital	60	30
Haverhill, 53,884—Essex		
Gen. Stephen Henry Gale Hosp.	125	95
Hale Hospital	50	35
Haverhill City Hospital	40	...
Haverhill Contagious Hospital	32	10
Haverhill Sanatorium (T.B.)	30	...
Holyoke, 60,203—Hampden		
Carpenter Hospital for Contagious Diseases	28	...
Holyoke City Hospital	125	85
Holyoke Sanatorium (T.B.)	50	35
Providence Hospital	125	120
Lawrence, 94,270—Essex		
Cottage Hospital	84	...
Lawrence General Hospital*	147	89
Lawrence Tuberculosis Hospital	88	50
Lowell, 112,479—Middlesex		
Chelmsford Street Hospital	200	160
Lowell Corporation Hospital*	100	55
Lowell General Hospital*	160	57
St. John's Hospital (new)*	120	80
Ludlow, 7,470—Hampden		
Ludlow Hospital Society	25	15
Lynn, 99,148—Essex		
Hospital for Contagious Diseases	50	...
Lynn City Tuberculosis Sanit.	60	...
Lynn Hospital*	136	95
Union Hospital	100	67
Malden, 49,103—Middlesex		
Malden Contagious Hospital	50	21
Malden Hospital	100	68
Marblehead, 7,324—Essex		
Children's Island Sanitarium	75	...
Marlboro, 15,017—Middlesex		
Marlboro Hospital	50	25
Medford, 39,037—Middlesex		
Medford Hospital	25	...
Melrose, 18,204—Middlesex		
Melrose Hospital	60	...
New England Sanitarium	120	77
Middleton, 1,468—Essex		
Essex Sanatorium	100	...
Milford, 13,058—Worcester		
Milford Hospital	50	30
Milton, 18,054—Norfolk		
Milton Convalescent Home and Hospital	31	...
Montague City, 7,675—Franklin		
Farren Memorial Hospital	50	...
Natick, 9,606—Middlesex		
Leonard Morse Hospital	50	30
New Bedford, 121,217—Bristol		
Dr. Derby's Private Hospital	30	...
New Bedford Tuberculosis Sanat.	115	114
St. Luke's Hospital*	250	150
Newburyport, 15,629—Essex		
Anna Jaques Hospital	78	35
Newburyport Homeopathic Hosp.	30	12
Newton, 46,054—Middlesex		
Newton Hospital*	165	113
North Adams, 22,282—Berkshire		
Berkshire Hills Sanitarium	150	...
North Adams Hospital	75	50
Northampton, 19,072—Hampshire		
Cooley Dickenson Hospital	116	...
Hampshire County Sanat. (T.B.)	50	36
Peabody, 18,653—Essex		
Josiah B. Thomas Hospital	50	28
Pittsfield, 41,536—Berkshire		
Hillcrest Hospital	37	33
House of Mercy Hospital*	175	85
Plymouth, 13,052—Plymouth		
Jordan Hospital	70	32
Provincetown, 3,936—Barnstable		
Barnstable County Infirmary	35	24
Quincy, 47,811—Norfolk		
City Hospital of Quincy	80	56
Salem, 43,815—Essex		
Health Dept. Hospital for Contagious Diseases	50	25
North Shore Babies' Hospital	30	30
Salem Hospital*	168	74
Sharon, 2,310—Norfolk		
Sharon Sanatorium (T.B.)	45	34
Somerville, 93,033—Middlesex		
Chandler Street Hospital	25	...
Somerville Contagious Dis. Hosp. (T.B. and Cont.)	75	22
Somerville Cottage Hospital	25	...
Somerville Hospital	60	...
South Braintree, 4,166—Norfolk		
Norfolk County Hospital (T.B.)	75	24
South Hanson, 423—Plymouth		
Plymouth Co. Hosp. (T.B.) (new)	60	52
Springfield, 129,336—Hampden		
Health Department Hospital	91	...
Mercy Hospital*	260	122
Springfield Hospital*	185	114
Wesson Maternity Hospital	45	37
Wesson Memorial Hospital	70	...
Taunton, 37,137—Bristol		
Morton Hospital	75	38
Waltham, 30,801—Middlesex		
Waltham Hospital*	110	70
Wellesley Hills, 2,980—Norfolk		
Convalescent Home of the Children's Hospital	75	60
Westfield, 16,029—Hampden		
Noble Hospital	55	...
West Suttland, 210—Worcester		
Prison Camp and Hospital (T.B.)	100	...
Winchendon, 5,991—Worcester		
Millers' River Hospital	25	10
Winchester, 16,991—Middlesex		
Winchester Hospital	50	26
Woburn, 18,365—Middlesex		
Charles Choates Memorial Hosp.	50	22
Worcester, 179,741—Worcester		
Belmont Hospital	75	...
Memorial Hospital*	200	136
St. Vincent's Hospital*	150	93
Worcester City Hospital*	300	227
Worcester Emergency Hospital	30	...
Worcester Hahnemann Hospital	30	25
Forty-six General Hospitals of less than 25 beds	785	210
Totals	15,225	8,331

In Massachusetts the following county has no hospital: Dukes.

MICHIGAN

	Total Beds	Av. Beds In Use
Albion, 8,384—Calhoun		
Albion Hospital	25	12
Almont, 700, Lapeer		
Burley Hospital	20	10
Ann Arbor, 19,516—Washtenaw		
Ann Arbor Private Hospital	25	15
St. Joseph's Sanitarium	80	65
University of Michigan Homeopathic Hospital*	154	114
University Hospital*	400	340
Bad Axe, 2,140—Huron		
Hubbard Memorial Hospital	30	21
Battle Creek, 26,164—Calhoun		
Battle Creek Sanitarium	700	500
Nichols Memorial Hospital (T.B. and N. and M.)	100	77
Bay City, 47,554—Bay		
Bay City Hospital	32	...
Detention Hospital	30	...
Mercy Hospital	125	50
West Side Hospital	35	...
Benton Harbor, 12,227—Berrien		
Mercy Hospital	50	25
Cadillac, 9,734—Wexford		
Mercy Hospital	30	27
Coldwater, 6,114—Branch		
Branch County Infirmary	60	...
Detroit, 993,739—Wayne		
Children's Free Hospital†	120	102
City of Detroit Receiving Hosp.*	340	140
Delray Industrial Hospital	80	60
Detroit Tuberculosis Sanatorium	175	161
Grace Hospital*	340	300
Harper Hospital*	440	390
Henry Ford Hospital†	70	55
Herman Kiefer Hospital	600	441
Michigan Hospital School	36	35
Michigan Mutual Hospital	40	31
Mirian Memorial Hospital	34	...
Providence Hospital*	350	275
Samaritan Hospital	60	49
St. Mary's Hospital*	325	280
Woman's Hospital and Infants' Home†	100	65
East Grand Rapids, 6,000—Kent		
Reed's Lake Sanitarium	60	...
Eloise, 700—Wayne		
Eloise Sanatorium (T.B.)	56	...
Escanaba, 13,103—Delta		
Laing Hospital	25	...
St. Francis Hospital	85	65
Flint, 91,599—Genesee		
Hurley Hospital	125	68
Ford City[4] (Village)—Wayne		
Emergency Hospital	25	...
Goodrich, 300—Genesee		
Goodrich General Hospital	30	...
Grand Rapids, 137,634—Kent		
Blodgett Memorial Hospital*	140	90
Butterworth Hospital*	150	100
DeVore Hospital and Sanitarium	50	40
Municipal Isolation Hospital	80	...
Municipal Tuberculosis Sanat.	45	32
St. Mary's Hospital*	100	78
Grayling, 2,450—Crawford		
Mercy Hospital	30	16
Hancock, 7,827—Houghton		
Hancock Public Hospital	25	...
Houghton Co. Detention Hosp	25	...
St. Joseph's Hospital	50	...
Harbor Beach, 1,820—Huron		
Harbor Beach Hospital	25	...
Highland Park, 46,499—Wayne		
Highland Park Contagious Hosp.	48	25
Houghton, 4,434—Houghton		
Houghton Co. Tuberculosis Sanat.	56	...
Iron Mountain, 8,251—Dickinson		
Scandinavian Hospital	36	19
St. George's Hospital	25	...
Ironwood, 13,730—Gogebic		
Union Hospital	30	15
Ishpeming, 10,566—Marquette		
Dr. Holm's Hospital	40	25
Ishpeming Hospital	50	17
Jackson, 48,374—Jackson		
W. A. Foote Memorial Hospital	125	...
Mercy Hospital	35	...

4. Small village. Postoffice is Wyandotte.

	Total Beds	Av. Beds In Use
Kalamazoo, 48,839—Kalamazoo		
Borgess Hospital	150	...
Bronson Hospital	50	...
Fairmount Hosp. (T.B. & Cont.)	100	...
Lake Linden, 2,182—Houghton		
Lake Superior General Hospital	30	...
Lansing, 57,327—Ingham		
Edward W. Sparrow Hospital	60	...
Laurium, 6,696—Houghton		
Calumet Public Hospital	25	15
Ludington, 8,810—Mason		
Paulina Stearns Hospital	30	20
Manistee, 9,698—Manistee		
Mercy Hospital and Sanitarium	114	26
Marquette, 12,716—Marquette		
Morgan Heights Tubere. Sanat.	30	20
St. Luke's Hospital	32	32
St. Mary's Hospital	122	85
Menominee, 9,967—Menominee		
St. Joseph's Hospital	65	...
Mt. Clemens, 9,489—Macomb		
Allenel Sanitarium	81	48
Mt. Clemens Sanitarium	105	...
St. Joseph's Sanitarium	120	25
Muskegon, 36,570—Muskegon		
Hackley Hospital*	100	65
Mercy Hospital	50	34
Negaunee, 7,419—Marquette		
Negaunee Hospital	30	...
New Buffalo, 496—Berrien		
Forest Beach Sanatorium	32	...
Petoskey, 5,054—Emmet		
Lockwood Hospital and Deaconess Home	25	12
Petoskey Hospital	40	27
Pontiac, 34,273—Oakland		
Pontiac City Hospital	50	40
Pt. Huron, 25,944—St. Clair		
Pt. Huron Hospital	58	40
Saginaw, 61,903—Saginaw		
Contagious Disease Hospital	25	...
Saginaw General Hospital	48	46
Saginaw Tuberculosis Hospital	32	32
St. Mary's Hospital	85	55
Woman's Hospital	50	30
Sault Ste. Marie, 12,826—Chippewa		
Sault Ste. Marie Hospital	32	19
Talbot (P.O. only)—Manistee		
Menominee County Infirmary	30	...
Trimountain, 2,500—Houghton		
Copper Range Hospital*	25	15
Forty-nine General Hospitals of less than 25 beds	777	189
Totals	9,230	5,095

In Michigan the following thirty-five counties have no hospitals: Alcona, Antrim, Arenac, Baraga, Barry, Benzie, Charlevoix, Cheboygan, Clare, Gladwin, Grand Traverse, Hillsdale, Ionco, Kalkaska, Lake, Lenawee, Livingston, Luce, Mackinac, Midland, Missaukee, Monroe, Montgomery, Newaygo, Oceana, Ogemaw, Ontonagon, Osceola, Oscoda, Otsego, Ottawa, Presque Isle, Roscommon, Sanilac, Shiawassee.

MINNESOTA

	Total Beds	Av. Beds In Use
Albert Lea, 5,056—Freeborn		
Naeve Hospital	50	...
Anoka, 4,329—Anoka		
Dr. Kline's Sanatorium	30	...
Austin, 10,118—Mower		
St. Olaf Hospital	60	15
Battle Lake, 628—Ottertail		
Ottertail County Sanat. (T.B.)	45	40
Bemidji, 7,026—Beltrami		
St. Anthony's Hospital	125	...
Braham, 511—Isanti		
Braham Hospital	25	14
Brainerd, 9,591—Crow Wing		
Northern Pacific Beneficial Association Hospital*	200	...
Northwestern Medical and Surgical Association, Inc.	28	16
St. Joseph's Hospital	36	29
Breckenridge, 2,691—Wilkin		
St. Francis Hospital	56	30
Buhl, 2,067—St. Louis		
Shaw Hospital	36	18
Cannon Falls, 1,315—Goodhue		
Mineral Springs Sanat. (T.B.)	28	25
Crookston, 6,625—Polk		
Bethesda Hospital	35	...
St. Vincent's Hospital	40	...
Sunnyrest Sanatorium (T.B.)	50	28
Crosby, 3,589—Crow Wing		
Miners' Hospital	25	5
Duluth, 1,51!—Lac Qui Parle		
Dawson Surgical Hospital	25	16
Duluth, 98,917—St. Louis		
Contagious Hospital	25	10
City Isolation Hospital	40	...
Morgan Park Hospital*	32	25
St. Louis County Almshouse Hospital and Tuberculosis Pavilion	70	...
St. Luke's Hospital Assn.	90	85
St. Mary's Hospital*	225	170
Ely, 4,082—St. Louis		
Shipman Hospital	30	7
Eveleth, 7,202—St. Louis		
More Hospital	30	15
Faribault, 11,626—Rice		
St. Lucas Evangelical Deaconess Hospital	50	36
Fergus Falls, 7,581—Ottertail		
George B. Wright Memorial Hospital	45	35
St. Luke's Hospital	50	...
Frazee, 1,377—Becker		
Frazee Hospital	30	...
Granite Falls, 1,454—Yellow Medicine		
Riverside Sanatorium (T.B.)	50	45
Hibbing, 15,666—St. Louis		
Hibbing Detention Hospital (T.B. and Cont.)	31	...
Hood Hospital	50	15
Hopkins, 5,066—Hennepin		
Glen Lake Sanatorium (T.B.)	190	104
International Falls, 3,445—Koochiching		
Northern Minnesota Hospital	50	23
Lake City, 2,846—Wabasha		
Lake City Hospital	25	15
Lake Park, 796—Becker		
Sand Beach Sanat. (T.B.)	26	24
Litchfield, 2,700—Meeker		
Litchfield Hospital	28	15
Little Falls, 5,506—Morrison		
St. Gabriel's Hospital	60	30
Mankato, 12,405—Blue Earth		
Evangelical Lutheran Immanuel Hospital	60	...
St. Joseph's Hospital	55	30
Marshall, 3,002—Lyon		
Marshall Hospital	25	12
Minneapolis, 380,582—Hennepin		
Abbott Hospital* (54 new)	106	35
Asbury Hospital	200	174
Eitel Hospital	125	75
Fairview Hospital	100	74
Hill Crest Surgical Hosp.	25	...
Hopewell Hospital (T.B.)	124	125
Lyndhurst Hospital	70	...
Martha Ripley Memorial Hosp.	100	73
Minneapolis General Hospital*	770	688
Northwestern Hospital*	100	90
Norwegian Lutheran Deaconess Hospital	99	79
Rest Hospital	25	...
St. Andrew's Hospital of the German Lutheran Church	35	31
St. Barnabas Hospital	175	11
St. Mary's Hospital*	225	200
Swedish Hospital*	175	142
Thomas Tubercular Hospital	65	60
University Hospital*	192	153
Montevideo, 4,419—Chippewa		
Montevideo Hospital	25	18
Moorhead, 5,726—Clay		
Northwestern Hospital	50	30
New Ulm, 6,743—Brown		
Loretto Hospital	35	...
Union Hospital	33	...
Nopeming (P.O. only)—St. Louis		
Nopeming Sanat. (T.B.)†	190	184
Ortonville, 1,774—Big Stone		
Ortonville Hospital	25	15
Owatonna, 7,252—Steele		
Owatonna City Hospital	35	18
Pokegama (P.O. Only)—Pine		
Pokegama Sanatorium (T.B.)	50	31
Princeton, 1,882—Millelacs		
Northwestern Hospital	35	20
Pupesky, 75—Beltrami		
Lake Julia Sanat (T.B.)	28	...
Red Wing, 6,837—Goodhue		
Red Wing Hospital	30	18
St. John's Hospital	75	50
Rochester, 13,722—Olmsted		
Oronoco Sanitarium (T.B.)	25	...
Colonial Sanatorium	230	220
St. Mary's Hospital*	256	23
Stanley Hospital	60	55
Worrell Hospital	131	115
Slayton, 1,045—Murray		
Home Hospital	30	15
Springfield, 1,249—Brown		
St. John's Deaconess Hospital	25	...
St. Cloud, 11,621, Stearns		
St. Raphael's Hospital	75	...
St. James, 2,673, Watonwan		
St. James Hospital and Sanit.	50	15
St. Paul, 234,698—Ramsey		
Bethesda Hospital and Deaconess Home	130	88
Chas. T. Miller Hosp.*	216	(New)
Children's Preventorium of Ramsey County (T.B.)	45	45
City and County Hospital*	800	500
Cobb Hospital	25	15
Dale Street Infirmary	72	...
Minnesota State Hospital for Indigent, Crippled and Deformed Children†	200	130
Mounds Park Sanitarium*	130	130
Nugent Sanitarium	50	...
St. John's Hospital	75	70
St. Joseph's Hospital*	150	105
St. Luke's Hospital*	145	113
St. Paul Hospital	100	94
West Side General Hospital	30	...
Stillwater, 7,735—Washington		
Stillwater City Hospital	25	...
Thief River Falls, 4,685—Pennington		
Oakland Park Sanat. (T.B.)	25	24
Physicians' Hospital	25	15
Two Harbors, 4,494—Lake		
Burns and Christinson Hospital	25	20
Virginia, 14,022—St. Louis		
McIntyre Hospital	25	15
Virginia Hospital	25	...
Wabasha, 2,622—Wabasha		
St. Elizabeth's Hospital	50	15
Wadena, 1,820—Wadena		
Fair Oak Lodge Sanat. (T.B.)	32	31
Warren, 1,272—Marshall		
Warren Hospital	40	35
Winona, 19,143—Winona		
Winona General Hospital	85	65
Sixty-three General Hospitals of less than 25 beds	956	234
Totals	10,074	5,302

In Minnesota the following twenty-three counties have no hospitals: Aitkin, Benton, Chisago, Clearwater, Cook, Dodge, Faribault, Fillmore, Hubbard, Kanabec, Kittson, Lesueur, Lincoln, McLeod, Mahnomen, Nicollet, Norman, Red Lake, Renville, Scott, Sherburne, Stevens, Waseca.

MISSISSIPPI

	Total Beds	Av. Beds In Use
Amory, 2,201—Monroe		
Gilmore Sanitarium	25	...
Biloxi, 10,937—Harrison		
Biloxi Hospital	35	15
Booneville, 1,405—Prentiss		
R. E. Mitchell Hospital	25	10
Columbia, 2,524, Marion		
Columbia Hospital	25	25
Columbus, 10,501—Lowndes		
Columbus Hospital	30	15
Greenville, 11,340—Washington		
King's Daughters' Hospital (White Patients)	35	...
Greenwood, 7,795—Leflore		
King's Daughters' Hospital	25	10
Gulfport, 6,137—Harrison		
King's Daughters' Hospital	25	...
Hattiesburg, 13,270—Forrest		
King's Daughters' and Son's Hosp.	50	25
South Mississippi Infirmary	50	...
Meridian, 1,406—Chickasaw		
Houston Hospital	50	...
Jackson, 22,679—Hinds		
Jackson Sanatorium	40	20
Laurel, 13,637—Jones		
Laurel General Hospital	40	...
South Mississippi Charity Hosp.	150	125
Marks, 1,020—Quitman		
Marks Hospital	25	...
Meridian, 23,439—Lauderdale		
Matty Hernee Hospital	90	60
Meridian Sanitarium	50	35
Turner Hospital	50	30
Natchez, 12,608—Adams		
Natchez Hospital*	150	110
Natchez Sanatorium	25	16
Oxford, 2,150—Lafayette		
Bramlett Hospital	25	6
University, 15—Lafayette		
University Hospital	25	2
Vicksburg, 17,931—Warren		
Mississippi State Charity Hosp.*	200	164
Vicksburg Infirmary	50	35
Vicksburg Sanitarium and Crawford Street Hospital	100	...
Winona, 2,220—Montgomery		
Winona Infirmary	35	20
Sixteen General Hospitals of less than 25 beds	272	55
Totals	1,702	779

In Mississippi the following sixty counties have no hospitals: Alcorn, Amite, Attala, Benton, Bolivar, Calhoun, Carroll, Choctaw, Claiborne, Clarke, Coahoma, Copiah, Covington, De Soto, Franklin, George, Greene, Grenada, Hancock, Holmes, Issaquena, Itawamba, Jackson, Jasper, Jefferson, Jefferson Davis, Kemper, Lake, Lamar, Lawrence, Leake, Lee, Madison, Marshall, Neshoba, Noxubee, Oktibbeha, Panola, Pearl River, Perry, Pike, Pontotoc, Rankin, Scott, Sharkey, Simpson, Smith, Stone, Sunflower, Tallahatchie, Tate, Tippah, Tishomingo, Tunica, Union, Walthall, Wayne, Webster, Wilkinson, Winston.

MISSOURI

	Total Beds	Av. Beds In Use
Bonne Terre, 3,015—St Francois		
Bonne Terre Hospital	25	18
Boonville, 4,663—Cooper		
St. Joseph's Hospital	25	18

	Total Beds	Av. Beds In Use
Spellerina Junction, 870—Hudson		
Mineral Spring Sanitarium	60	...
Cape Girardeau, 10,223—Cape Girardeau		
St. Francis Hospital	60	...
Chillicothe, 6,525—Livingston		
Chillicothe Hospital	50	22
Columbia, 10,379—Boone		
Parker Memorial Hospital	41	21
Excelsior Springs, 4,165—Clay		
Excelsior Springs Sanitarium	26	15
Georgetown, 196—Pettis		
Pettis County Hospital	35	...
Hannibal, 18,896—Marion		
Lefering Hospital	50	23
St. Elizabeth's Hospital	30	20
Independence, 11,663—Jackson		
Independence Sanitarium	60	35
Jefferson City, 14,628—Cole		
St. Mary's Hospital	60	...
Joplin, 29,535—Jasper		
St. John's Hospital	100	...
Kansas City, 324,410—Jackson		
Baptist Hospital	35	...
Children's Mercy Hospital*	125	75
Christian Church Hospital	140	100
East Side Hospital	25	15
Grace Hospital	100	54
Kansas City General Hospital*	500	250
Research Hospital*	100	100
St. Joseph's Hospital*	215	125
St. Luke's Hospital*	50	40
St. Mary's Hospital*	175	130
St. Vincent's Maternity Hospital	150	...
Swedish Hospital*	60	37
University Hospital*	60	34
Veil Maternity Hospital	50	30
Wesley Hospital	100	65
Wheatley-Provident Hospital	60	...
Wilcrest Hospital	58	31
Kosh (P. O. Only)—St. Louis		
Robert Koch Hospital	300	200
Leeds, 1,005—Jackson		
Kansas City Tuberculosis Hosp.	120	52
Liberty, 2,567, Clay		
Missouri Odd Fellows Home Hosp.	75	24
Maryville, 4,711—Nodaway		
St. Francis Hospital	75	...
Mexico, 6,412—Audrain		
Audrain Hospital	35	15
Moberly, 12,809—Randolph		
Wabash Employees' Hospital	70	26
Woodland Hospital	50	33
Nevada, 7,125—Vernon		
Nevada Medical and Surgical Sanitarium	30	9
Vernon Hospital	25	15
Sedalia, 21,144—Pettis		
Missouri, Kansas and Texas Railroad Hospital	125	30
Springfield, 39,631—Greene		
Ellen A. Burge Deaconess Hospital	30	27
Frisco Employees Hospital	170	40
Springfield Hospital	75	30
St. John's Hospital	60	26
St. Charles, 5,809—St. Charles		
St. Joseph's Hospital	30	23
St. Joseph, 77,939—Buchanan		
Buchanan County Infirmary	107	...
Missouri Methodist Hospital	80	66
Noyes Memorial Hospital	90	66
St. Joseph's Hospital	120	...
St. Louis, 772,809—St. Louis City		
Alexian Brothers Hospital*	250	186
Barnes Hospital*	250	147
Barnard Free Skin and Cancer Hospital*	44	32
Bethesda Foundling Home and Maternity Hospital	110	85
Bethesda Hospital	80	65
Carondelet Hospital	25	...
City Isolation Hospital	250	55
Evangelical Deaconess Home Hospital	110	96
Frisco Employees Hospital	116	49
Jewish Hospital*	110	90
Lutheran Hospital	86	25
Missouri Baptist Sanitarium*	375	300
Missouri Pacific Hospital	200	141
Mt. St. Rose Hospital (T.B.)	130	125
St. Ann's Maternity Hospital	50	...
St. Anthony's Hospital	100	95
St. John's Hospital*	194	...
St. Louis Baptist Hospital	75	70
St. Louis Children's Hospital*	147	75
St. Louis City Hospital*	800	755
St. Louis City Hospital No. 2*	225	150
St. Louis Maternity Hospital	100	94
St. Louis Midland Hospital	150	75
St. Luke's Hospital*	175	119
St. Mary's Infirmary*	160	125
Webb City, 7,697—Jasper		
Jane Chinn Hospital	25	...
Jasper County Tuberculosis Hosp.	125	62
Fifteen General Hospitals of less than 25 beds	229	54
Totals	7,983	4,909

In Missouri the following eighty-nine counties have no hospitals: Adair, Andrew, Atchison, Barry, Barton, Bates, Benton, Bollinger, Caldwell, Callaway, Camden, Carter, Cass, Cedar, Chariton, Clark, Clinton, Crawford, Dade, Dallas, Daviess, Dekalb, Dent, Douglas, Dunklin, Franklin, Gasconade, Gentry, Harrison, Henry, Hickory, Holt, Howard, Howell, Iron, Jefferson, Johnson, Knox, Laclede, Lafayette, Lewis, Lincoln, Linn, Macon, McDonald, Madison, Maries, Mercer, Miller, Mississippi, Moniteau, Monroe, Montgomery, Morgan, New Madrid, Newton, Oregon, Osage, Ozark, Pemiscot, Perry, Phelps, Pike, Platte, Polk, Pulaski, Putnam, Ralls, Ray, Reynolds, Ripley, St. Clair, Ste. Genevieve, Saline, Scotland, Scott, Shannon, Shelby, Stoddard, Stone, Sullivan, Taney, Texas, Warren, Washington, Wayne, Webster, Worth, Wright.

MONTANA

	Total Beds	Av. Beds In Use
Anaconda, 11,668—Deerlodge		
St. Ann's Hospital*	100	...
Billings, 15,100—Yellowstone		
St. Vincent's Hospital	65	40
Bozeman, 5,192—Gallatin		
Bozeman Deaconess Hospital	62	22
Butte, 41,611—Silver Bow		
Butte Hospital	26	21
Murray Hospital*	100	75
Silverbow County Hospital	150	...
St. James Hospital*	150	75
Conrad, 893—Teton		
Conrad Hospital Association	30	20
Deer Lodge, 3,788—Powell		
St. Joseph's Hospital	50	...
Dillon, 2,701—Beaverhead		
Beaverhead County Hospital	25	...
Ft. Benton, 1,494—Chouteau		
St. Clare's Hospital	45	...
Glasgow, 2,988—Valley		
Frances Mahon Deaconess Hosp.	30	...
Glendive, 3,016—Dawson		
Northern Pacific Hospital*	50	29
Great Falls, 24,121—Cascade		
Columbus Hospital	165	106
Great Falls Detention Hospital	60	...
Montana Deaconess Hospital	140	103
Harlowton, 1,295—Wheatland		
Ballard Hospital	30	25
Havre, 5,420—Hill		
Sacred Heart Hospital	40	...
Helena, 12,037—Lewis and Clark		
Lewis and Clark County Hosp.	20	9
St. John's Hospital	150	...
St. Peter's Hospital	60	...
Hunter's Hot Springs, 54—Park		
Hunter's Hot Spring Sanit.	200	...
Kalispell, 5,147—Flathead		
Kalispell General Hospital	60	...
Lewistown, 5,129—Fergus		
Fergus County Farm and Hosp.	60	...
St. Joseph's Hospital	47	30
Livingston, 6,336—Park		
Park Hospital	30	20
Miles City, 7,057—Custer		
Miles City Hospital	75	...
Missoula, 12,668—Missoula		
No. Pacific Beneficial Assn. Hosp.*	75	40
St. Patrick's Hospital	100	65
Red Lodge, 4,512—Carbon		
Mt. Maurice Hospital and Sanit.	25	9
Sidney, 1,498—Richland		
Sidney Deaconess Hospital	30	12
Whitefish, 1,479—Flathead		
Whitefish Hospital	30	...
Fourteen General Hospitals of less than 25 beds	210	32
Totals	2,490	731

In Montana the following sixteen counties have no hospitals: Big Horn, Blaine, Broadwater, Carter, Fallon, Granite, Jefferson, Lincoln, Madison, Meagher, Mineral, Phillips, Rosebud, Sheridan, Stillwater, Wibaux.

NEBRASKA

	Total Beds	Av. Beds In Use
Albion, 1,978—Boone		
Physicians' Hospital	28	(New)
Alliance, 4,391—Box Butte		
St. Joseph Hospital	50	...
Beatrice, 9,664—Gage		
Beatrice Sanitarium	25	15
Lutheran Hospital	26	16
Mennonite Deaconess Home and Hospital	30	...
Cambridge, 1,042—Furnas		
Republican Valley Hospital	25	10
Columbus, 5,410—Platte		
St. Mary's Hospital	135	...
David City, 2,316—Butler		
David City Hospital	25	15
Dunbar, 312—Otoe		
Otoe County Infirmary	25	20
Fairbury, 5,454—Jefferson		
Fairbury Hospital	25	...
Falls City, 4,930—Richardson		
Community Hospital	40	10
Fremont, 9,570—Dodge		
Fremont Hospital	30	15
Grand Island, 12,326—Hall		
Grand Island General Hospital	30	15
St. Francis Hospital	135	100
Hastings, 11,647—Adams		
Mary Lanning Memorial Hospital	60	...
Nebraska Sanitarium	25	20
Nebraska, 1,813—Thayer		
Blue Valley Hospital	25	17
Lincoln, 54,934—Lancaster		
Esther's Hospital	26	...
Lincoln Hospital	30	20
Lincoln Sanitarium	100	90
Nebraska Orthopedic Hospital	100	...
St. Elizabeth's Hospital*	150	100
Norfolk, 8,034—Madison		
Campbell Hospital	35	25
Norfolk General Hospital	32	22
Omaha, 191,601—Douglas		
Bishop Clarkson Memorial Hosp.*	90	63
Christian Fenger Hospital	175	75
City Detention Hospital	40	10
City Hospital for Women	50	15
Creighton Memorial St. Joseph's Hospital*	400	300
Douglas County Hospital	80	55
Ford Hospital	65	60
Immanuel Hospital	65	38
Nebraska Methodist Episcopal Hospital*	200	150
Nicholas Senn Hospital	75	75
Presbyterian Hospital	45	30
Radium Hospital of Omaha	50	...
South Side Hospital	30	(New)
St. Catherin's Hospital	75	75
Swedish Mission Hospital	100	65
University Hospital*	130	...
Wise Memorial Hospital	85	55
Ord, 2,142—Valley		
Ord Hospital	25	(New)
Seward, 2,300—Seward		
Morrow Hospital	30	20
York, 5,398—York		
Lutheran Hospital	75	50
Twenty-five General Hospitals of less than 25 beds	392	100
Totals	3,567	1,794

In Nebraska the following fifty-eight counties have no hospitals: Antelope, Arthur, Banner, Blaine, Brown, Cass, Chase, Cherry, Cheyenne, Clay, Colfax, Cuming, Custer, Dakota, Dawes, Dawson, Deuel, Dixon, Dundy, Fillmore, Franklin, Frontier, Garden, Garfield, Gosper, Grant, Greeley, Hamilton, Harlan, Hayes, Holt, Hooker, Johnson, Kearney, Keith, Kayapaha, Kimball, Knox, Logan, Loup, McPherson, Merrick, Nance, Nemaha, Perkins, Phelps, Pierce, Polk, Rock, Sarpy, Saunders, Sheridan, Sherman, Sioux, Stanton, Thomas, Webster, Wheeler.

NEVADA

	Total Beds	Av. Beds In Use
East Ely, 475—White Pine		
Steptoe Valley Hospital	55	30
Elko, 2,173—Elko		
Elko County General Hospital	50	15
Panaca, 600—Lincoln		
Duckworth Hospital	25	...
Reno, 12,016—Washoe		
St. Mary's Hospital	40	...
Washoe County Hospital	90	60
Tonopah, 4,164—Nye		
Nye County Hospital	35	...
Virginia City, 1,200—Storey		
Storey County Hospital	50	22
Winnemucca, 1,275—Humboldt		
Humboldt County Hospital	22	10
Eleven General Hospitals of less than 25 beds	176	66
Totals	553	203

In Nevada the following three counties have no hospitals: Eureka, Lander, Ormsby.

NEW HAMPSHIRE

	Total Beds	Av. Beds In Use
Berlin, 16,104—Coos		
St. Louis Hospital	50	...
Claremont, 7,529—Sullivan		
Claremont General Hospital	25	15
Concord, 22,167—Merrimack		
Margaret Pillsbury Gen. Hosp.	70	38
New Hampshire Memorial Hospital for Women and Children	40	27
Dover, 13,029—Strafford		
Wentworth Hospital	60	35
Exeter, 4,604—Rockingham		
Exeter Hospital	30	19
Franklin, 6,318—Merrimack		
Franklin Hospital	50	19
Hanover, 400—Grafton		
Hillsboro County Hospital	100	70
Hanover, 1,813—Grafton		
Mary Hitchcock Memorial Hosp.*	75	51
Keene, 11,210—Cheshire		
Elliott City Hospital	40	24
Laconia, 10,057—Belknap		
Laconia Hospital	35	21

	Total Beds	Av. Beds In Use
Manchester, 78,209—Hillsborough		
Elliot Hospital	74	45
Hospital of Notre Dame de Lourdes	50	40
Isolation Hospital	50	16
Sacred Heart Hospital	90	54
Nashua, 28,379—Hillsborough		
Nashua Memorial Hospital	54	38
St. Joseph's Hospital	115	75
Newport, 5,705—Sullivan		
Carrie P. Wright Memorial Hosp.	25	10
North Conway, 1,906—Carroll		
Memorial Hospital	30	...
Pembroke, 2,982—Merrimack		
Pembroke Sanatorium	62	58
Portsmouth, 13,569—Rockingham		
Portsmouth Hospital	35	...
Whitefield, 1,833—Coos		
Morrison Hospital	40	34
Woodsville, 1,759—Grafton		
Woodsville Cottage Hospital	27	13
Eighth General Hospitals of less than 25 beds	131	30
Totals	1,354	731

All counties in New Hampshire have hospitals.

NEW JERSEY

	Total Beds	Av. Beds In Use
Ancora, 275—Camden		
Sunny Rest Sanat. (T.B.)	70	60
Asbury Park, 12,499—Monmouth		
Municipal Hospital for Communicable Diseases	35	...
Atlantic City, 50,521—Atlantic		
Atlantic City Hospital*	120	73
Children's Seashore House	400	100
Municipal Hospital	62	...
Bayonne, 76,754—Hudson		
Bayonne Hospital and Dispensary*	100	75
Dr. Swiney's Sanitarium	28	16
Belleville, 15,028—Essex		
Essex County Tuberculosis Sanatorium (T.B.)	250	200
Blackwood, ... 000—Camden		
Camden County Almshouse Hosp.	65	45
Bridgeton, 14,323—Cumberland		
Bridgeton Hospital Assn.	35	...
Broad's Mills-in-the-Pines[3] (Village)—Burlington		
Brown's Mills Sanatorium (T.B.)	35	27
Camden, 116,309—Camden		
Cooper Hospital*	150	120
Municipal Hospital for Contagious Diseases	80	...
West Jersey Homeopathic Hospital*	150	83
Elizabeth, 95,783—Union		
Alexian Brothers' Hospital*	125	61
Elizabeth General Hospital and Dispensary*	170	115
St. Elizabeth's Hospital*	160	114
Englewood, 11,617—Bergen		
Englewood Hospital*	115	65
Franklin, 4,675—Sussex		
Franklin Hospital	30	18
Hackensack, 17,625—Bergen		
Hackensack Hospital*	130	88
Hoboken, 68,166—Hudson		
St. Mary's Hospital*	400	170
Jersey City, 297,864—Hudson		
Bergen Private Sanitarium	30	25
Christ Hospital*	120	110
Fairmount Surgical Sanat.	40	34
Jersey City Hospital*	600	226
Kearney, 29,724—Hudson		
West Hudson Hospital*	30	20
Long Branch, 13,231—Monmouth		
Monmouth Memorial Hospital*	175	110
Millville, 14,691—Cumberland		
Millville Hospital	30	12
Montclair, 28,810—Essex		
Mountainside Hospital*	150	90
Morristown, 12,543—Morris		
All Souls' Hospital	90	52
Morristown Memorial Hosp.	150	70
Physiatric Institute	50	...
Shonghum Sanatorium (T.B.)	38	25
Mt. Holly, 5,750—Burlington		
Burlington County Hospital	50	25
Newark, 414,216—Essex		
Babies Hospital	35	17
Homeopathic Hospital of Essex County	62	45
Hospital for Women and Children	60	31
Hospital of St. Barnabas*	110	79
Lincoln Private Hospital	25	(New)
Newark Beth Israel Hospital*	100	88
Newark City Hospital*	500	...
Newark Memorial Hospital*	125	75
Newark Private Hospital	50	48
Presbyterian Hospital	100	65
St. James' Hospital*	85	60
St. Michael's Hospital*	235	...
New Brunswick, 32,779—Middlesex		
Middlesex General Hospital	75	36
St. Peter's General Hospital	110	80
New Lisbon, 50, Burlington		
Fairview Tuberculosis Sanat.	25	...

3. Small village, postoffice is Brown Mills.

	Total Beds	Av. Beds In Use
Northfield, 1,127—Atlantic		
Atlantic County Hospital for Tuberculous Diseases	48	...
Orange, 33,268—Essex		
Orange Memorial Hospital*	150	118
St. Mary's Hospital*	150	...
Passaic, 63,524—Passaic		
City Hospital for Contagious Diseases (T.B.)	50	...
Passaic General Hospital*	170	...
St. Mary's Hospital*	160	...
Paterson, 135,866—Passaic		
Nathan and Miriam Barnert Memorial Hospital*	85	...
Paterson General Hospital*	169	103
Paterson Isolation Hospital	75	...
St. Joseph's Hospital*	350	...
Perth Amboy, 41,767—Middlesex		
Perth Amboy City Hospital	100	75
Plainfield, 27,702—Union		
Muhlenberg Hospital*	112	101
Plainfield Sanitarium	55	...
Pompton, 470—Passaic		
W. Curtis Adams sanatorium	35	...
Princeton, 5,917—Mercer		
Isabella McCosh Infirmary	30	12
Salem, 7,435—Salem		
Salem County Mem Hosp.	30	...
Scotch Plains, 1,600—Union		
Runnel Burn Sanit. (T.B.)	240	200
Secaucus, 5,423—Hudson		
Hudson County Hospital	240	70
Hudson County Small-Pox Hosp.	50	...
Hudson County Tuberculosis Hospital and Sanatorium	200	160
Somerville, 6,718—Somerset		
Somerset Hospital	34	18
Spring Lake, 853—Monmouth		
Ann May Memorial Homeopathic Hospital	54	...
Summit, 10,174—Union		
Overlook Hospital	66	56
Thorofare, 102, Gloucester		
Sanitarium Association of Philadelphia	25	...
Trenton, 119,289—Mercer		
Mercer Hospital*	175	97
Municipal Colony (T.B.)	275	45
St. Francis Hospital*	165	160
William McKinley Memorial Hospital*	75	55
Ventnor, 491—Atlantic		
North American Sanitarium for Bone Tuberculosis	75	...
Verona, 3,039—Essex		
Essex Mountain Sanat. (T.B.)	80	60
Vineland, 6,790—Cumberland		
Physicians' Hospital	27	...
Vineland Hospital	30	...
Weehawken, 11,226—Hudson		
North Hudson Hospital*	75	58
Eleven General Hospitals of less than 25 beds	186	41
Totals	9,852	4,873

In New Jersey the following two counties have no hospitals: Hunterdon and Warren.

NEW MEXICO

	Total Beds	Av. Beds In Use
Albuquerque, 15,157—Bernalillo		
Albuquerque Sanatorium (T.B.)	60	48
Methodist Episcopal Sanat. (T.B.)	60	56
Murphey Sanatorium for the Treatment of Tuberculosis	100	75
Santa Fe Coast Lines Hospital	60	...
Southwestern Presbyterian Sanat.	100	...
St. Joseph's Sanatorium and Hospital	75	50
Women's and Children's Hosp.	30	20
Clovis, 4,984—Curry		
Atchison, Topeka and Santa Fe Hospital Association	32	20
Dawson, 196—Colfax		
Dawson Hospital	35	...
Deming, 25—Sin Nombre		
Jicarilla Sanatorium	100	...
East Las Vegas, 3,913—San Miguel		
Las Vegas Hospital	30	...
St. Anthony's Sanitarium	55	...
Gallup, 3,020—McKinley		
St. Mary's Hospital	50	30
Gardiner, 1,120—Colfax		
Gardiner Hospital	40	18
Gobernador (P.O. only)—McKinley		
Gobernador Mission Hospital	30	15
Roswell, 7,862—Chaves		
St. Mary's Hospital	35	30
Roy, 356—Mora		
Plumlee Hospital	25	10
Santa Fe, 7,236—Santa Fe		
St. Vincent's Sanitarium and Hospital	50	40
Sunmount Sanatorium	50	32
Silver City, 1,140—Grant		
New Mexico Cottage Sanatorium	100	75
St. Joseph's Sanatorium	32	...
Tucumcari, 2,117—Quay		
Tucumcari Hospital	25	10
Tyrone (P.O. only)—Grant		
T. S. Parker Hospital	35	15

	Total Beds	Av. Beds In Use
Valmora (P.O. only)—Mora		
Valmora Industrial Sanatorium	100	70
Twelve General Hospitals of less than 25 beds	210	50
Totals	1,519	664

In New Mexico the following thirteen counties have no hospitals: De Baca, Dona Ana, Guadalupe, Lea, Lincoln, Roosevelt, Sandoval, Sierra, Socorro, Taos, Torrance, Union, Valencia.

NEW YORK

	Total Beds	Av. Beds In Use
Albany, 113,344—Albany		
Albany Hospital*	400	221
Anthony N. Brady Maternity Hospital	50	35
Child's Hospital	60	35
Homeopathic Hospital	110	90
St. Margaret's House and Hospital	50	45
St. Peter's Hospital*	110	85
Albion, 4,695—Orleans		
Orleans County Almshouse Hospital	30	...
Amityville, 3,282—Suffolk		
Louden Hall, Cottage Home Sanitarium	75	...
Amsterdam, 33,524—Montgomery		
Amsterdam City Hospital	76	42
Montgomery Sanatorium (T.B.)	38	38
St. Mary's Hospital	45	...
Auburn, 36,142—Cayuga		
Auburn City Hospital*	165	...
Sunny Crest Sanatorium (T.B.)	38	38
Ballston Spa, 4,102—Saratoga		
Carpentier Infirmary	25	...
Batavia, 13,541—Genesee		
Women's Hospital Association	60	25
Bath, 4,795—Steuben		
Bath Hospital	30	...
Pleasant Valley Sanat. (T.B.)	28	23
Beacon, 10,990—Dutchess		
Highlands Hospital	25	...
Bedford Hills, 1,038—Westchester		
Montefiore Home Country Sanitarium (T.B.)†	218	218
Binghamton, 66,662—Broome		
Binghamton City Hospital*	165	45
Bronxville, 3,055—Westchester		
Lawrence Hospital	60	33
Brooklyn, 2,018,356—Kings		
Bethany Deaconess Home and Hospital Society	40	...
Brooklyn Eye and Ear Hospital	70	...
Brooklyn Hospital*	270	220
Brooklyn Nursery and Infants' Hospital	40	...
Bushwick Hospital	100	66
Carson C. Peck Memorial Hospital	100	40
Coney Island Hospital	120	60
Cumberland Street Hospital	220	121
Flushing Hosp. and Dispensary	64	...
Greenpoint Hospital*	210	134
Harbor Hospital	55	30
Hospital of the Holy Family*	102	73
Jewish Hospital of Brooklyn*	325	253
Kings County Hospital*	1,500	825
Kingston Avenue Hospital*	250	204
Long Island College Hospital*	600	413
Lutheran Hospital	54	40
Methodist Episcopal Hospital*	300	199
Midwood Sanitarium	34	26
Norwegian Lutheran Deaconess Home and Hospital*	190	149
Prospect Heights Hospital and Brooklyn Maternity	60	...
Samaritan Hospital	48	30
Sea Breeze Hospital	45	...
Skene Sanitarium	33	25
St. Catherine's Hospital*	250	189
St. Christopher's Hospital	100	65
St. John's Hospital*	95	...
St. Mary's Hospital of the City of Brooklyn*	300	171
St. Peter's Hospital*	300	274
Swedish Hospital*	900	366
Trinity Hospital	32	23
Tuberculosis Camp Rutherford (T.B.)	122	...
Williamsburgh Hospital	60	54
Wyckoff Heights Hospital of Brooklyn*	175	131
Zion Hospital	50	...
Buffalo, 506,875—Erie		
Buffalo City Hospital*	300	...
Buffalo Columbus Hospital*	75	50
Buffalo General Hospital*	375	276
Buffalo Homeopathic Hospital*	174	168
Buffalo Hospital of the Sisters of Charity*	300	115
Buffalo Women's Hospital	32	30
Children's Hospital*	119	96
Deaconess Hospital*	135	134
Emergency Hospital of the Sisters of Charity*	95	89
Erie County Hospital*	300	275
Ernest Wende Hospital	200	...
Lafayette General Hospital	91	35

	Total Beds	Av. Beds In Use
Memorial Hospital	65	...
Mercy Hospital	46	...
Municipal Hospital	200	...
St. Mary's Infant Asylum and Maternity Hospital	60	50
Cambridge, 1,350—Washington		
Mary McClellan Hospital	50	28
Canandaigua, 7,256—Ontario		
Canandaigua Hospital of Physicians and Surgeons	50	...
Frederick Ferris Thompson Hospital	65	54
Canajoharie Bridge, 129—Greene		
Broome County Tuberculosis Hospital	78	36
Canton, Spring, 1,632—Ontario		
Clifton Springs Sanitarium	300	250
Cohoes, 22,987—Albany		
Cohoes Hospital	69	31
Mary Immaculate Hospital	100	...
Thanksgiving Hospital	25	19
Corning, 15,525—Steuben		
Corning Hospital	52	38
Cortland, 15,296—Cortland		
Cortland County Hospital	50	...
Dahl, 1,608—Delaware		
Delaware County Tuberculosis Hospital	28	9
Dewittville, 41—Chautauqua		
Chautauqua County Almshouse and Hospital	77	60
Dobbs Ferry, 4,401—Westchester		
Dobbs Ferry Hospital	35	18
Dunkirk, 18,326—Chautauqua		
Brook's Memorial Hospital	70	38
East Bloomfield, 356—Ontario		
Oak Mount Sanitarium (T.B.)	25	22
East View, 80—Westchester		
Grasslands Hospital.*	500	250
Elmira, 45,393—Chemung		
Arnot-Ogden Memorial Hosp.*	110	70
Chemung Sanatorium (T.B.)	30	23
St. Joseph's Hospital	80	67
Far Rockaway, 2,900—Queens		
St. Joseph's Hospital	85	45
Flushing, 20,366—Queens		
Flushing Hospital and Dispensary*	150	80
Fulton, 13,643—Oswego		
Albert Lindley Lee Memorial Hosp.	35	...
Gabriels, 200—Franklin		
Sanatorium Gabriels (T.B.)	70	55
Gardenville, 700—Erie		
St. Joseph's Hospital	25	...
Geneva, 14,666—Ontario		
Geneva City Hospital	65	44
Glens Falls, 14,351—Warren		
Glens Falls Hospital*	90	62
Gloversville, 23,678—Fulton		
Nathan Littauer Hospital	58	43
Goffstown, 142—Suffolk		
Suffolk Sanatorium (T.B.)	48	45
Gowanda, 2,502—Erie		
St. James Mercy Hospital	54	31
Hamburg Sanitarium	75	50
Hudson, 11,345—Columbia		
Hudson City Hospital	60	37
Ithaca City Hospital		
Ithaca, 17,004—Tompkins		
Cornell Infirmary	60	...
Ithaca City Hospital	80	70
Jamaica, 73,566—Queens		
Jamaica Hospital	63	45
Mary Immaculate Hospital	90	85
Queensboro Hospital	45	10
Jamestown, 32,548—Chautauqua		
O. H. Kane Memorial Hospital	100	40
Woman's Christian Association Hospital	60	56
Kingston, 26,000—Ulster		
Kingston City Hospital	50	30
Our Lady of Victory Sanitarium	40	30
Lackawanna, 17,918—Erie		
Moore Taylor Hospital	20	17
Lake Kushaqua (P.O. only)—Franklin		
Stony Wold Sanat. (T.B.)	119	90
Lestershire (Village)—Broome		
Lestershire Hospital	30	...
Liberty, 2,495—Sullivan		
Wilkinson House (T.B.)	30	23
Workmen's Circle Sanatorium	100	66
Little Falls, 13,629—Herkimer		
Little Falls City Hospital	30	18
Lockport, 21,386—Niagara		
Lockport City Hospital	50	4
Niagara Sanatorium	130	110
Long Island—Queens		
Medford Sanitarium	30	...
St. John's Long Island City Hospital*	225	88
Loomis, 200—Sullivan		
Loomis Sanatorium (T.B.)	200	157
Malone, 7,346—Franklin		
Alice Hyde Memorial Hospital	48	34
Middle Grove, 217—Saratoga		
Saratoga County Tuberculosis Hospital	60	60
Middletown, 18,429—Orange		
Middletown Sanitarium	50	35
Thrall Hospital	40	32

6. Small village; postoffice in Johnson City.
†. Population included in New York City.

	Total Beds	Av. Beds In Use
Mineola, 3,916—Nassau		
Mineola House for Cardiacs	52	...
Nassau Hospital Association*	76	55
St. McGregor (P.O. only)—Saratoga		
Metropolitan Life Insurance Company Sanatorium	275	216
Mt. Vernon, 42,726—Westchester		
Mt. Vernon Hospital*	103	68
Newburgh, 30,273—Orange		
Estelle and Walter Odell Sanatorium for Tuberculosis	48	30
St. Luke's Hospital	95	69
New Hartford, 1,021—Oneida		
Camp Healthmore (T.B.)	33	20
New Rochelle, 36,213—Westchester		
New Rochelle Hospital Assn*	100	95
New York City, 5,621,151—New York		
Audubon Sanitarium	65	50
Babies Hospital†	75	46
Bellevue Hospital*	1,658	1,414
Beth Israel Hospital*	139	104
Bread Street Hospital	100	80
Correctional Hospital*	45	38
Columbus Hospital	87	62
Community Hospital	107	65
Ferry-Boat "Middletown" Day Camp of Dept. of Health (T.B.)	126	...
Ferry-Boat "Southfield" Day Camp of the Bellevue Hospital (T.B.)	100	...
Floating Hospital	450	200
Fordham Hospital*	276	202
French Hospital*	120	95
Gouverneur Hospital*	200	...
Hahnemann Hospital*	135	96
Harlem Eye, Ear and Throat Hospital	25	...
Harlem Hospital*	600	385
Harlem Italian Sanitarium	40	...
Herman Knapp Mem. Eye Hosp.†	50	...
Hospital and House of Rest for Consumptives	75	73
Hospital of the Joint Diseases	97	78
Hospital of St. Elizabeth of Hungary	50	...
Italian Hospital of the Borough of Manhattan	100	...
Jewish Maternity Hospital†	52	...
Knickerbocker Hospital*	53	36
Laura Franklin Free Hospital for Children	68	...
Lebanon Hospital*	196	151
Lenox Hill Hospital*	317	246
Lincoln Hospital and Home*	350	300
Lutheran Hospital of Manhattan	41	27
Lying-In Hospital of the City of New York†	155	112
Manhattan Eye, Ear and Throat Hospital	196	136
Manhattan Maternity and Dispensary†	64	45
Memorial Hospital†	100	70
Metropolitan Hospital*	1,337	919
L. Mihalovitch's Sanitarium	25	18
Misericordia Hospital	325	285
Montefiore Home and Hospital†	400	...
Mt. Sinai Hospital*	531	426
New York City Hospital*	1,000	613
New York Eye and Ear Infirmary†	175	118
New York Foundling Hospital	550	550
New York Homeopathic Medical College and Flower Hospital*	200	190
New York Hospital House of Relief	286	235
New York Infirmary for Women and Children†	123	60
New York Nursery and Child's Hospital†	321	190
New York Ophthalmic Hospital†	74	40
New York Orthopedic Dispensary and Hospital†	100	87
New York Polyclinic Medical School and Hospital	378	250
New York Post-Graduate Medical School and Hospital*	407	302
New York Skin and Cancer Hospital†	100	75
Park Hospital*	65	65
People's Hospital	50	...
Philanthropic Hospital	25	...
Presbyterian Hospital in the City of New York*	250	218
Radium Institute and Laboratories	22	...
Rebecca Private Hospital	30	20
Riverside Hospital†	730	323
Riverside Hospital (T.B.)†	344	...
Roosevelt Hospital*	285	230
Seton Hospital (T.B.)†	240	230
Sloane Hospital for Women†	173	139
Society of the New York Hospital*	395	345
St. Ann's Maternity Hospital	60	40
St. Bartholomew's Clinic	47	(New)
St. Elizabeth's Hospital	50	...
St. Francis Hospital*	650	325
St. Joseph's Hospital for Consumptives	425	401
St. Lawrence Hospital*	54	48
St. Luke's Hospital*	400	336
St. Mark's Hospital*	150	122
St. Mary's Free Hospital for Children†	120	90

	Total Beds	Av. Beds In Use
St. Vincent's Hospital*	355	300
A. R. Stern Hospital	58	...
Sydenham Post-Graduate Course and Hospital*	76	60
Tuberculosis Division, Metropolitan Hospital	814	...
Tuberculosis Hospital Admission Bureau	4,200	3,500
Union Hospital of the Bronx	25	17
Van Cortland Private Hospital	50	...
Volunteer's Hospital*	75	32
Washington Square Hospital	30	23
Willard Parker and Reception Hospitals†	950	250
Woman's Hospital*	252	181
Niagara Falls, 30,760—Niagara		
Mt. St. Mary's Hospital	100	...
Niagara Falls Memorial Hospital	125	80
North Tonawanda, 15,622—Niagara		
DeGraff Memorial Hospital	38	15
Nyack, 4,444—Rockland		
Nyack Hospital	25	19
Ogdensburg, 14,000—Saint Lawrence		
A. Barton Hepburn Hospital	170	...
Olean, 20,256—Cattaraugus		
Mountain Clinic Hospital	50	34
Olean General Hospital	60	42
Rocky Crest Sanat. (T.B.)	26	23
Oneida, 10,541—Madison		
Broad Street Hospital	51	36
Oneonta, 11,383—Otsego		
Aurelia Osborn Fox Memorial Hospital	50	26
Onondaga, 256—Onondaga		
Onondaga County Hospital	80	70
Ossining, 10,739—Westchester		
Ossining Hospital	60	40
Oswego, 23,368—Oswego		
Oswego Hospital	68	42
Peekskill, 15,869—Westchester		
Peekskill Hospital	50	23
Perrysburg, 271—Cattaraugus		
J. N. Adams Memorial Hospital (T.B.)	330	295
Piltmont, 1,919—Columbia		
Columbia Sanatorium	48	(New)
Plattsburg, 10,906—Clinton		
Champlain Valley Hospital	75	60
Physicians' Hospital	50	22
Poughkeepsie, 35,000—Dutchess		
Samuel W. Bowne Memorial Hosp.	137	126
St. Francis Hospital	45	30
Vassar Brothers Hospital*	103	71
Pt. Chester, 16,573—Westchester		
United Hospital*	51	...
Rainbow Lake, 25—Franklin		
Rainbow Sanatorium (T.B.)	50	40
Richland, 300—Oswego		
Oswego County Sanat. (T.B.)	64	50
Rochester, 295,750—Monroe		
Hahnemann Hospital*	138	125
Homeopathic Hospital*	136	114
Infants Summer Hospital	64	40
Lee Private Hospital	55	40
Monroe County Hospital	260	...
Monroe County Tuberculosis Sanatorium	218	177
Park Avenue Hospital	32	...
Rochester General Hospital*	265	254
Rochester Municipal Hospital	100	30
St. Mary's Hospital	306	...
Rockaway Beach†—Queens		
Neponsit Beach Hospital for Children	120	...
Rockaway Beach Hospital and Dispensary	33	24
Rome, 20,341—Oneida		
Oneida County Hospital	200	149
Rome Hospital	50	33
Rome Infirmary	42	22
Salamanca, 9,276—Cattaraugus		
Salamanca Hospital	25	11
Saranac Lake, 4,893—Franklin		
St. Mary's of the Lake (T.B.)	30	20
Saratoga Springs, 13,181—Saratoga		
Dr. R. H. McCarty's Hospital	25	...
Saratoga Hospital	60	38
Saratoga Springs Medical Sanitarium (T.B.)	25	...
Saratoga Springs Sanitarium	150	...
St. Christina's Hospital	62	...
Schenectady, 88,723—Schenectady		
Ellis Hospital, also the Hospital Ass'n of the City of N. Y.*	175	...
Glenridge Sanitarium (T.B.)	72	...
Sodus, 1,329—Wayne		
Myers Hospital	25	...
Southampton, 2,635—Suffolk		
Southampton Hospital Assn.	50	26
Staten Island, 93,634—Richmond		
Seaside Hospital	400	250
Sea View Hospital (T.B.)	2,146	1,282
St. Vincent's Hospital of the Borough of Manhattan	85	50
Staten Island Hospital*	159	120
Swinburne Island Hospital	2,000	(New)
Suffern, 3,154—Rockland		
Good Samaritan Hospital	40	22

8. This is a part of Far Rockaway, which has a population of 2,900.

	Total Beds	Av. Beds In Use
Summit Park* (Village)—Rockland		
Rockland County Tuberc. Hosp.	48	30
Sylvan Beach, 193—Oneida		
Oneida Hospital and Training School for Nurses	42	25
Syracuse, 171,647—Onondaga		
City Hospital	175	...
Crouse-Irving Hospital	200	120
Hospital of the Good Shepherd*	250	153
Onondaga County Hospital (T.B.)	105	102
Onondaga Sanatorium (T.B.)	106	102
St. Joseph's Hospital*	130	87
St. Mary's Maternity and Infants Hospital	90	...
Syracuse Homeopathic Hospital	54	30
Syracuse Memorial Hospital*	150	104
Tarrytown, 5,887—Westchester		
Tarrytown Hospital	39	...
Taughannock* (Village)—Tompkins		
Tompkins County Tuberc. Hospital	31	21
Troy, 72,013—Rensselaer		
City Smallpox Hospital	40	...
Lakeview Sanatorium	61	50
Leonard Hospital	50	32
Samaritan Hospital*	121	100
St. Joseph's Maternity Hospital	30	...
Troy Hospital Assn.	250	136
Trudeau, 225—Essex		
Trudeau Sanitarium	110	110
Utica, 94,156—Oneida		
Faxton Hospital	75	50
St. Elizabeth's Hospital and Home	180	60
St. Luke's Home and Hospital	120	74
Utica General Hospital	90	42
Utica Homeopathic Hospital	74	65
Watertown, 31,285—Jefferson		
House of the Good Samaritan	83	...
Jefferson County Tuberc. Hospital	36	24
St. Joachim's Hospital	85	75
White Plains, 21,031—Westchester		
Country Branch of the New York Orthopedic Disp. and Hospital	140	...
White Plains Hospital Assn.*	44	...
Whitesboro, 2,375—Oneida		
Whitesboro Sanitarium	30	...
Woodhaven, 2,940—Queens		
St. Anthony's Hospital (T.B.)	300	...
Wyantskill, 196—Rensselaer		
Pawling Sanitarium (T.B.)	202	110
Yonkers, 100,176—Westchester		
Municipal Hospital (T.B.)	58	...
St. John's Riverside Hospital	103	76
St. Joseph's Hospital*	82	50
Yonkers Homeopathic Hospital and Maternity	95	55
Yonkers City Hospital for Communicable Diseases	94	...
Sixty General Hospitals of less than 25 beds	975	310
Totals	56,166	30,919

In New York the following eight counties have no hospitals: Greene, Hamilton, Lewis, Putnam, Schoharie, Scuyler, Tioga, Yates.

NORTH CAROLINA

	Total Beds	Av. Beds In Use
Asheville, 28,504—Buncombe		
Asheville Mission Hospital	85	63
Fairview Cottages Sanit. (T.B.)	30	...
Meriwether Hosp. and Tr. School	75	40
St. Joseph's Sanatorium (T.B.)	50	...
Winyah Sanatorium operated by Von Ruck Memorial Sanatorium, Inc. (T.B.)	125	80
Biltmore, 173—Buncombe		
Clarence Barker Memorial Hospital and Dispensary	45	30
Swananoa Hill Sanitarium (T.B.)	27	...
Black Mountain, 831—Buncombe		
Cragmont Sanatorium (T.B.)	50	50
Fellowship Sanatorium of the Royal League (T.B.)	30	...
Burlington, 5,952—Alamance		
Rainey Hospital	25	...
Charlotte, 46,318—Mecklenburg		
Mercy General Hospital	50	40
New Charlotte Sanatorium	75	50
Presbyterian Hospital	100	78
St. Peter's Hospital	60	...
Durham, 21,719—Durham		
Lincoln Hospital	50	34
Fayetteville, 3,877—Cumberland		
Highsmith Hospital*	75	50
Gastonia, 12,571—Gaston		
City Hospital	33	18
Gaston County Sanatorium	30	15
Goldsboro, 11,296—Wayne		
Goldsboro Hospital	40	...
Magnolia Grove Hospital	10	3
Spicer's Sanatorium	25	18
Greensboro, 19,742—Guilford		
St. Leo's Hospital	100	75
Wesley Long Hospital	35	...
Hamlet, 3,650—Richmond		
Hamlet Hospital	40	20
Henderson, 3,222—Vance		
Sarah Elizabeth Hospital	25	12

9. Small village, postoffice is Pomona.
10. Small village, postoffice is Ludlowville.

	Total Beds	Av. Beds In Use
Hendersonville, 3,726—Henderson		
Edgemont Sanatorium (T.B.)	25	...
Patton Memorial Hospital	20	...
High Point, 14,302—Guilford		
Guilford General Hospital	38	19
High Point Hospital	40	35
Kinston, 9,771—Lenoir		
Parrott Memorial Hospital	40	6
Lincolnton, 3,390—Lincoln		
Lincoln Hospital	25	18
Lumberton, 2,691—Robeson		
Thompson Hospital	25	15
Morehead City, 2,936—Carteret		
Morehead City Hospital	35	18
Morganton, 2,967—Burke		
Grace Hospital	32	17
Mt. Airy, 4,753—Surry		
Martin Memorial Hospital	35	28
Newbern, 12,198—Craven		
St. Luke's Hospital	40	25
Raleigh, 24,076—Wake		
Mary Elizabeth Hospital	32	20
Rex Hospital*	85	55
St. Agnes' Hospital	95	...
Roanoke Rapids, 3,202—Halifax		
Roanoke Rapids Hospital	65	25
Rocky Mount, 12,742—Edgecombe		
Atlantic Coast Line Railroad Hosp.	30	14
Parkview Hospital	60	...
Rocky Mount Sanitarium	60	37
Rutherfordton, 1,625—Rutherford		
Rutherford Hospital†	50	37
Salisbury, 13,944—Rowan		
Wheatbedding Stokes Sanatorium	58	30
Scholds, 945—Pitt		
Infants and Childrens Sanitarium	45	...
Sanatorium (P.O. only)—Hoke		
Sanat. for Treatment of Tuberc.	200	200
Statesville, 7,995—Iredell		
Carpenter-Davis Hospital	25	15
Long's Sanatorium	50	25
Tarboro, 4,988—Edgecomb		
Edgecomb General Hospital	50	25
Washington, 5,160—Beaufort		
S. R. Fowle Memorial Hospital	25	20
Washington Hospital	55	...
Waynesville, 1,043—Haywood		
Waynesville Hospital	25	8
West Durham, 2,668—Durham		
Watts' Hospital	100	...
Wilmington, 33,372—New Hanover		
James Walker Memorial Hospital*	225	90
Wilson, 10,035—Wilson		
Carolina General Hospital	45	...
Moore-Herring Hospital	35	25
Wilson Hospital and Tuberc. Home	28	...
Winston-Salem, 48,395—Forsyth		
Forsyth County Tuberculosis Hosp.	30	18
Winston-Salem City Mem. Hosp.	85	60
Eighteen General Hospitals of less than 25 beds	295	101
Totals	3,382	1,682

In North Carolina the following sixty counties have no hospitals: Alexander, Alleghany, Ashe, Avery, Bertie, Bladen, Brunswick, Cabarrus, Caldwell, Camden, Caswell, Chatham, Cherokee, Chowan, Clay, Cleveland, Columbus, Currituck, Dare, Davidson, Davie, Duplin, Franklin, Gaton, Graham, Granville, Greene, Hertford, Hyde, Jackson, Johnson, Jones, McDowel, Martin, Mitchel, Montgomery, Nash, Northampton, Onslow, Orange, Pamlico, Pasquotank, Pender, Perquimans, Person, Pitt, Rockingham, Sampson, Scotland, Stanly, Stokes, Swain, Transylvania, Tyrell, Warren, Washington, Watauga, Wilkes, Yadkin, Yancey.

NORTH DAKOTA

	Total Beds	Av. Beds In Use
Arvilla, 68—Grand Forks		
Grand Forks County Hospital	30	...
Bismarck, 9,951—Burleigh		
Bismarck Evangelical Hospital*	140	103
St. Alexius Hospital	125	75
Bottineau, 1,172—Bottineau		
St. Andrew's Hospital	28	...
Carrington, 1,429—Foster		
Carrington Hospital	25	...
Devils Lake, 5,140—Ramsey		
General Hospital	40	21
Mercy Hospital and Mercy Deaconess Hospital	50	29
Dickinson, 4,122—Stark		
St. Joseph's Hospital	45	30
Fargo, 21,961—Cass		
Cass County Hospital	30	18
City Detention Hospital	60	...
St. John's Hospital*	110	90
St. Luke's Hospital	150	93
Grand Forks, 13,956—Grand Forks		
Detention Hospital	25	...
Grand Forks Deaconess Hospital	75	...
St. Michael's Hospital	65	45
Jamestown, 6,627—Stutsman		
Trinity Hospital	65	44
Kenmare, 1,446—Ward		
Lakeside Hospital	70	40
Mandan, 4,326—Morton		
Mandan Deaconess Hospital	30	22

	Total Beds	Av. Beds In Use
Minot, 10,476—Ward		
St. Joseph's Hospital	90	60
St. Luke's Hospital	35	20
Northwood, 935—Grand Forks		
Northwood Deaconess Hospital	30	...
Oakes, 1,637—Dickey		
Oakes Hospital	25	14
Rugby, 1,424—Pierce		
Good Samaritan Hospital	40	...
Valley City, 4,686—Barnes		
Barnes County Hospital	25	...
Valley City General Hospital	30	...
Fifteen General Hospitals of less than 25 beds	207	33
Totals	1,441	737

In North Dakota the following twenty-nine counties have no hospitals: Adams, Billings, Bowman, Divide, Dunn, Golden Valley, Grant, Griggs, Hettinger, Kidder, La Moure, Logan, McHenry, McIntosh, McKenzie, McLean, Mercer, Mountrail, Nelson, Oliver, Renville, Sargent, Sheridan, Sioux, Slope, Steele, Towner, Traill, Williams.

OHIO

	Total Beds	Av. Beds In Use
Akron, 208,435—Summit		
Children's Hospital and Mary Day Nursery	57	40
City Hospital of Akron*	225	155
Peoples Hospital	128	90
Spring Lake Sanitarium (T.B.)	110	103
Summit County Infirmary	50	...
Alliance, 20,623—Stark		
Alliance City Hospital	60	40
Ashland, 9,240—Ashland		
Samaritan Hospital	31	16
Ashtabula, 22,932—Ashtabula		
Ashtabula General Hospital	65	43
Barberton, 16,311—Summit		
Citizens Hospital	35	...
Bellaire, 15,031—Belmont		
City Hospital of Bellaire	50	...
Canton, 87,091—Stark		
Aultman Memorial Hospital	80	70
Ingleside Hospital	35	...
Mercy Hospital	85	75
Carthage, 5,619—Hamilton		
Hamilton County Infirmary	35	20
Chillicothe, 15,821—Ross		
Chillicothe Hospital	30	...
Mt. Logan Sanatorium (T.B.)	28	...
Cincinnati, 401,152—Hamilton		
Bethesda Hospital and Scarlet Oaks Sanitarium	210	187
Hospital of the Protestant Episcopal Church	85	50
Christ Hospital*	175	121
Cincinnati General Hospital*	850	650
Cincinnati Tuberculosis Sanat.†	400	198
Deaconess Hospital	80	55
Good Samaritan Hospital*	210	150
Jewish Hospital*	240	190
Rockhill Sanatorium (T.B.)	70	65
Scarlet Oaks Sanatorium	70	50
Seton Hospital	90	72
St. Francis Hospital	366	...
St. Joseph Maternity Hospital and Infant Asylum	150	...
St. Mary's Hospital	250	...
Cleveland, 796,836—Cuyahoga		
Canfield-White Hospital	25	...
Cleveland City Hospital*	850	474
Cleveland Maternity Hospital	120	85
East 105th Street Hospital	60	32
Evangelical Lutheran Hospital	70	60
Fairview Park Hospital	85	65
Glenville Hospital	75	60
Grace Hospital	35	...
Huron Road Hospital	97	65
Lakeside Hospital*	289	207
Mt. Sinai Hospital*	155	94
St. Alexis Hospital	250	...
St. Ann's Infant Asylum and Maternity Hospital	55	...
St. Clair Hospital	80	...
St. John's Hospital*	150	...
St. Luke's Hospital*	160	120
St. Mark's Hospital	90	60
St. Vincent's Charity Hospital*	290	...
Columbus, 237,031—Franklin		
Children's Hospital*	50	17
Franklin County Sanatorium	110	100
Grant Hospital	300	245
Hawkes Hospital*	175	125
Mercy Hospital	50	30
Protestant Hospital Assn.*	110	90
St. Anthony's Hospital	303	190
St. Clair Hospital	35	19
St. Francis Hospital*	100	90
University Homeopathic Hospital	87	60
Coshocton, 16,847—Coshocton		
Coshocton City Hospital	35	15
Dayton, 152,559—Montgomery		
Miami Valley Hospital*	305	185
Quarantine Hospital	40	...
St. Elizabeth Hospital	400	350
Stillwater Sanitarium (T.B.)	65	60
Delaware, 6,786—Delaware		
Jane M. Case Hospital	35	25

	Total Beds	At Beds In Use
Dennison, 5,224—Tuscarawas		
Twin City Hospital	25	12
Dover, 8,101—Tuscarawas		
Union Hospital	25	...
East Liverpool, 21,411—Columbiana		
East Liverpool City Hospital	100	...
Elyria, 30,474—Lorain		
Elyria Memorial Hospital and Gates Hospital for Crippled and Deformed Children	125	81
Findlay, 17,821—Hancock		
The Home and Hospital	35	22
Fremont, 12,468—Sandusky		
Memorial Hosp. of Sandusky Co.	50	17
Gallipolis, 8,070—Gallia		
Holzer Hospital	52	18
Hamilton, 39,675—Butler		
Mercy Hospital	160	100
Ruth Hospital	30	7
Hartwell, 2,625—Hamilton		
Cincinnati City Infirmary	160	110
Ironton, 14,067—Lawrence		
Charles S. Gray Deaconess Hosp.	35	29
Marting Hospital	30	10
Kenton, 7,698—Hardin		
McKitrick Hospital	40	9
Lakewood[11]—Cuyahoga		
Lakewood Public Hospital	53	40
Lancaster, 14,706—Fairfield		
Lancaster Municipal Hospital	38	21
Lima, 41,326—Allen		
District Tuberculosis Hospital	50	40
Lima Hospital Society	90	65
St. Rita's Hospital	100	35
Logan, 3,465—Hocking		
Cherrington Hospital	35	15
Lorain, 37,295—Lorain		
St. Joseph Hospital	120	66
Mansfield, 27,634—Richland		
Mansfield General Hospital	65	37
Marietta, 15,140—Washington		
Marietta Hospital	40	...
Washington County Infirmary	100	...
Martins Ferry, 11,634—Belmont		
Martin's Ferry Hospital	50	34
Massillon, 17,428—Stark		
Massillon City Hospital	75	61
McConnelsville, 1,616—Morgan		
Rocky Glen Sanatorium (T.B.)	48	47
Middletown, 23,304—Butler		
Middletown Hospital	65	22
Mt. Vernon, 9,227—Knox		
Mt. Vernon Medical and Surgical Sanitarium	30	18
Newark, 26,718—Licking		
Newark City Hospital	52	30
Newark Sanitarium	25	16
Norwalk, 7,579—Huron		
Memorial Hospital	25	12
Painesville, 7,273—Lake		
Lake County Hospital	30	25
Piqua, 18,446—Miami		
Memorial Hospital	40	28
Portsmouth, 33,011—Scioto		
Hempsted Hospital	45	25
Ravenna, 7,218—Portage		
Portage County Hospital	65	29
Salem, 8,346—Columbiana		
Salem City Hospital	50	34
Sandusky, 22,897—Erie		
Good Samaritan Hospital	25	17
Providence Hospital	50	26
South Euclid, 1,600—Cuyahoga		
Rainbow Hospital	100	84
Springfield, 60,840—Clark		
District Tuberculosis Hospital	70	53
Springfield City Hospital[9]	100	74
Steubenville, 28,508—Jefferson		
Ohio Valley Hospital	110	67
Tiffin, 14,579—Seneca		
Kentucky Memorial Hospital	60	...
Mercy Hospital	50	...
Seneca County Infirmary	30	...
Toledo, 243,164—Lucas		
Bast Side Hospital Training School for Nurses	45	...
Flower (Deaconess) Hospital	55	...
Lucas County Infirmary	150	...
Lucas County Tuberculosis Hosp.	114	90
Maternity and Children's Hospital	25	...
Mercy Hospital	90	65
Robinwood Avenue Hosp. Assn.	70	36
St. Vincent's Hospital	250	...
Toledo Hospital	40	6
Toledo Hospital	130	50
Urbana, 7,621—Champaign		
Champaign County Hospital	30	...
Van Wert, 8,100—Van Wert		
Van Wert County Hospital	32	15
Warren, 27,026—Trumbull		
Warren City Hospital	85	60
Warrensville, 150—Cuyahoga		
Cleveland City Infirmary	66	66
Cleveland Municipal Tuber. Sanat.	250	200
Wooster, 5,304—Wayne		
Wooster Hospital	35	25
Xenia, 9,110—Greene		
McClellan Hospital	25	15
Youngstown, 132,358—Mahoning		
St. Elizabeth's Hospital	175	132
Youngstown Hospital[9]	250	227
Zanesville, 29,569—Muskingum		
Bethesda Hospital	60	35
Good Samaritan Hospital	100	61
Forty-eight General Hospitals of less than 25 beds	721	120
Totals	14,838	7,651

11. A suburb of Cleveland.

In Ohio the following thirty-three counties have no hospitals: Adams, Athens, Auglaize, Brown, Carroll, Clermont, Clinton, Darke, Fulton, Geonga, Harrison, Henry, Holmes, Jackson, Madison, Marion, Medina, Meigs, Mercer, Monroe, Morrow, Noble, Paulding, Perry, Pickaway, Pike, Preble, Putnam, Shelby, Union, Vinton, Warren, Wyandot.

OKLAHOMA

	Total Beds	At Beds In Use
Ardmore, 14,181—Carter		
Hardy Sanitarium	60	35
Van Keller Hospital	30	15
Blackwell, 7,174—Kay		
Blackwell Hospital	35	15
Chickasha, 12,017—Alfalfa		
Alfalfa County General Hospital	50	18
Chickasha, 16,179—Grady		
Chickasha Hospital	30	15
Clinton, 2,200—Custer		
Clinton Hosp. and Training School	40	31
Cordell, 1,825—Washita		
Florence Hospital	30	12
Durant, 7,340—Bryan		
Durant Memorial Hospital	35	15
El Reno, 7,727—Canadian		
El Reno Sanitarium	60	26
Enid, 16,576—Garfield		
Enid General Hospital	35	25
Enid Springs Sanit. and Hosp.	30	16
University Hospital	30	20
Guthrie, 11,757—Logan		
Oklahoma Methodist Hospital	40	26
Lawton, 8,200—Comanche		
Southwestern Hospital	35	10
Muskogee, 3,465—Creek		
Border Hospital	40	15
McAlester, 12,295—Pittsburg		
All Saints' Hospital	50	25
St. Mary's Infirmary	33	...
Muskogee, 30,277—Muskogee		
M. O. and C. Hospital	40	...
Physicians and Surgeons Hospital	50	...
Baptist General Convention of the State of Oklahoma	80	57
Oklahoma, 91,295—Oklahoma		
Oklahoma City Deaconess Hospital	100	...
Oklahoma Cottage Sanat. (T.B.)	30	25
Oklahoma State Baptist Hospital	45	30
St. Anthony's Hospital[9]	150	105
St. Luke's Hospital	50	...
State University Hospital[9]	176	124
Wesley Hospital	55	40
Okmulgee, 17,420—Okmulgee		
Okmulgee City Hospital	25	25
Sand Springs, 4,000—Tulsa		
Home Hospital and Sanatorium	30	...
Shawnee, 15,240—Pottawatomie		
Shawnee General Hospital	50	32
Tulsa, 72,075—Tulsa		
Morningside Hospital	40	5
Oklahoma Hospital	52	30
Physicians and Surgeons Municipal Hospital	30	30
Tulsa Hospital	64	...
Twenty-one General Hospitals of less than 25 beds	339	85
Totals	2,069	898

In Oklahoma the following fifty counties have no hospitals: Adair, Atoka, Beaver, Beckham, Blaine, Caddo, Cherokee, Choctaw, Cimarron, Cleveland, Cotton, Craig, Creek, Delaware, Dewey, Ellis, Gravin, Grant, Harmon, Harper, Haskell, Hughes, Johnston, Kingfisher, Latimer, LeFlore, Lincoln, Love, McClain, McCurtain, McIntosh, Major, Marshall, Mayes, Murray, Noble, Nowata, Okfuskee, Osage, Ottawa, Pawnee, Pontotoc, Pushmataha, Roger Mills, Rogers, Seminole, Sequoyah, Texas, Tillman, Wagoner.

OREGON

	Total Beds	At Beds In Use
Ashland, 4,393—Jackson		
Granite City Hospital	25	8
Astoria, 14,027—Clatsop		
St. Mary's Hospital	175	65
Baker, 7,226—Baker		
St. Elizabeth's Hospital	50	...
Bay City, 511—Tillamook		
Tillamook Bay Hospital	70	...
Bend, 5,415—Deschutes		
St. Charles Hospital	25	...
Enterprise, 1,894—Wallowa		
Enterprise Hospital	25	(New)
Eugene, 19,593—Lane		
Mercy Hospital	45	...
Hot Lake, 21—Union		
Hot Lake Sanatorium	160	40
Klamath Falls, 4,051—Klamath		
Blackburn Hospital	25	...
La Grande, 6,913—Union		
Grande Ronde Hospital	40	19
Medford, 13,304—Jackson		
Sacred Heart Hospital	75	30
North Bend, 3,268—Coos		
Mercy Hospital	50	40
Ontario, 2,038—Malheur		
Holy Rosary Hospital	40	25
Oregon City, 5,626—Clackamas		
Oregon City Hospital	40	28
Pendleton, 7,367—Umatilla		
St. Anthony's Hospital	55	40
Portland, 258,288—Multnomah		
Emanuel Hospital	90	67
Good Samaritan Hospital	300	280
Multnomah County Hospital[9]	100	65
Portland Open Air Sanatorium (T.B.)	50	...
Portland Surgical Hospital	45	...
Sellwood General Hospital	60	60
St. Vincent's Hospital[9]	400	325
Roseburg, 4,381—Douglas		
Mercy Hospital	29	10
Salem, 17,679—Marion		
Salem Hospital	50	...
Willamette Sanatorium	30	27
Springfield, 1,855—Lane		
Springfield General Hospital	40	...
The Dalles, 5,867—Wasco		
The Dalles Hospital	80	60
Nineteen General Hospitals of less than 25 beds	310	78
Totals	2,504	1,267

In Oregon the following thirteen counties have no hospitals: Benton, Columbia, Crook, Grant, Harney, Jefferson, Lake, Lincoln, Morrow, Sherman, Washington, Wheeler, Yamhill.

PENNSYLVANIA

	Total Beds	At Beds In Use
Abington, 980—Montgomery		
Abington Memorial Hospital	67	48
Allentown, 73,502—Lehigh		
Allentown Hospital[9]	210	131
Sacred Heart Hospital	150	52
Allenwood, 410—Union		
Devitt's Camp for Tuberculosis	60	...
Altoona, 60,331—Blair		
Altoona Hospital	165	90
Mercy Hospital	75	45
Ashland, 6,063—Schuylkill		
State Hosp. for Injured Persons	290	251
Austin, 1,535—Potter		
North Pennsylvania Hospital and Sanitarium	20	...
Beaver Falls, 12,563—Beaver		
Providence Hospital	85	60
Bellefonte, 3,906—Centre		
Bellefonte Hospital	50	25
Bellevue, 6,196—Allegheny		
Suburban General Hospital	65	52
Bells Camp (P.O. only)—McKean		
Ben Air Sanatorium (T.B.)	35	30
Berwick, 12,181—Columbia		
Berwick Hospital	50	24
Bloomsburg, 7,819—Columbia		
Bloomsburg Hospital	60	30
Blossburg, 2,633—Tioga		
Blossburg State Hospital	80	72
Braddock, 20,879—Allegheny		
Braddock General Hospital	125	96
Bradford, 14,523—McKean		
Bradford Hospital	100	83
Brownsville, 2,363—Fayette		
Brownsville General Hospital	37	35
Bryn Mawr, 3,966—Montgomery		
Bryn Mawr Hospital[9]	75	63
Butler, 23,776—Butler		
Butler County General Hospital	35	...
Canonsburg, 10,633—Washington		
Canonsburg General Hospital	40	...
Carbondale, 18,040—Lackawanna		
Emergency Hospital	90	67
Carlisle, 10,916—Cumberland		
Carlisle Hospital	50	24
Chambersburg, 13,171—Franklin		
Chambersburg Hospital	60	34
Chester, 58,030—Delaware		
Chester Hospital[9]	143	98
Clearfield, 6,529—Clearfield		
Clearfield Hospital	100	76
Coaldale, 9,336—Schuylkill		
State Hospital	46	46
Coatesville, 14,510—Chester		
Coatesville Hospital	45	30
Columbia, 10,536—Lancaster		
Columbia Hospital	45	30
Connellsville, 13,204—Fayette		
Cottage State Hospital	45	...
Corry, 7,229—Erie		
Corry Hospital	50	23
Danville, 6,993—Montour		
Geo. F. Geisinger Mem. Hosp.[9]	80	64

	Total Beds	Av. Beds In Use
Derrancston, 6,334—Luzerne		
Nesbitt West Side Hospital	50	26
Du Bois, 13,681—Clearfield		
Du Bois Hospital	50	27
Eagleville, 104—Montgomery		
Eagleville Sanatorium (T.B.)	110	107
Easton, 33,813—Northampton		
Dr. Correll's Private Hospital	30	26
Easton Hospital*	110	75
Erie, 93,372—Erie		
Hamot Hospital	180	110
St. Vincent's Hospital*	235	144
Franklin, 9,570—Venango		
Franklin Hospital	40	16
Greensburg, 15,633—Westmoreland		
Westmoreland Hospital	100	80
Grossville, 8,101—Mercer		
Greenville Hospital	32	22
Harrisburg, 75,917—Dauphin		
Harrisburg Hospital*	151	120
Polyclinic Hospital	52	31
Marietta, 32,277—Lancaster		
State Hospital for Injured Persons of the Middle Coal Field	130	118
Hollwood (P. O. Only)—Indiana		
Penn-Mary Hospital	50	15
Homestead, 20,462—Allegheny		
Homestead Hospital	35	...
Honesdale, 2,736—Wayne		
Wayne Memorial Hospital	25	(New)
Huntingdon, 7,681—Huntingdon		
J. C. Blair Memorial Hospital	68	39
Indiana, 7,043—Indiana		
Indiana Hospital	70	...
Johnstown, 67,327—Cambria		
Cambria Hospital	50	47
Conemaugh Valley Mem. Hosp.	140	128
Mercy Hospital	98	63
Municipal Hospital	60	...
Kane, 7,383—McKean		
Kane Summit Hospital	85	40
Lancaster, 53,150—Lancaster		
Lancaster General Hospital*	135	112
St. Joseph's Hospital	125	95
Lansdale, 4,738—Montgomery		
Engelhardt Sanatorium	35	25
Latrobe, 9,484—Westmoreland		
Latrobe Hospital	40	32
Lebanon, 26,843—Lebanon		
Good Samaritan Hospital	80	28
Lewistown, 5,405—Mifflin		
Lewistown Hospital	50	38
Leak Haven, 8,557—Clinton		
Lock Haven Hospital	60	53
Lock No. 4, 533—Washington		
Charleroi-Monessen Hospital	32	22
Malvern, 1,206—Chester		
Country Br., Rush Hosp. (T.B.)	30	...
Mayview† (Village)—Allegheny		
Pittsburgh City Home and Hosp.	2,600	1,840
McKeesport, 45,975—Allegheny		
McKeesport Hospital*	180	141
McKees Rocks, 16,713—Allegheny		
Ohio Valley General Hospital	60	60
Meadville, 13,545—Crawford		
Meadville City Hospital	60	32
Spencer Hospital	40	...
Media, 4,169—Delaware		
Media Hospital	30	...
Mercer, 1,935—Mercer		
Cottage State Hospital for Injured Persons	35	8
Monongahela, 8,689—Washington		
Memorial Hospital	70	42
Morton, 1,212—Delaware		
Dermady Cottage Sanat. (T.B.)	40	...
Mt. Pleasant, 5,863—Westmoreland		
Jacob Justice Free Dispensary and Mt. Pleasant Mem'rial Hospital	60	...
Mt. Pocono, 750—Monroe		
Dr. McGinty's Hospital	50	45
Nanticoke, 22,614—Luzerne		
State Hospital	75	74
New Brighton, 9,361—Beaver		
Beaver Valley General Hospital	68	30
New Castle, 44,938—Lawrence		
New Castle Hospital	75	44
Rheanago Valley Hospital	85	37
New Kensington, 11,967—Westmoreland		
Citizen's General Hospital	71	52
Norristown, 32,319—Montgomery		
Charity Hospital	72	50
Old Forge, 13,237—Lackawanna		
Taylor Hospital Assn.	40	...
Oil City, 21,374—Venango		
Grandview Sanatorium (T.B.)	30	28
Oil City Hospital	75	35
Olyphant, 10,236—Lackawanna		
Blakeley Poor District Hospital	92	87
Palmerton, 7,168—Carbon		
Palmerton Hospital	65	47
Pawtucket, 3,915—Lackawanna		
Eid-Valley Hospital	34	23
Philadelphia, 1,823,779—Philadelphia		
American Hospital for Diseases of the Stomach	37	...
Amerigan Oncologic Hospital	37	23

† P. O. Small village, postoffice in Bridgeville.

	Total Beds	Av. Beds In Use
Anderson Hospital and College of Physio-Therapy	40	31
Babies Hospital of Philadelphia	60	...
Bainbridge Private Hospital	50	29
Belmont Hospital	90	...
Chestnut Hill Hospital	56	50
Children's Homeopathic Hospital†	100	...
Children's Hosp. of Philadelphia†	55	...
Frankford Hospital*	128	69
Frederick Douglas Mem. Hosp.*	75	35
Fulton Sanitarium	25	...
Garretson Hospital	50	30
Germantown Disp. and Hosp.*	175	114
Girard College Infirmary	124	...
Gynecean Hospital	42	40
Hahnemann Med. Coll. and Hosp.*	320	299
Henry Phipps Institute (T.B.)	31	30
Home for Consumptives	104	96
Hospital of the Protestant Episcopal Church*	500	294
Hospital of the University of Pennsylvania*	433	323
Hospital of the Women's Homeopathic Assn. of Pennsylvania*	160	80
Hospital of the Woman's Medical College of Pennsylvania*	150	85
Howard Hospital	80	70
Jefferson Maternity Hospital	30	...
Jefferson Medical College Hosp.*	357	336
Jewish Hospital of Philadelphia*	186	155
Jewish Maternity Hospital†	45	33
Kensington Hospital for Women	76	55
Lankenau Hospital*	250	176
Lebanon Hospital	25	...
Mary J. Drexel Home and Children's Hospital	55 (in Hos.)	
Medico-Chirurgical Hospital	307	62
Memorial Hospital*	105	57
Mercy Hospital	85	44
Methodist Episcopal Hospital*	190	151
Misericordia Hospital*	225	...
Mt. Sinai Hospital*	69	67
Municipal Hospital	1,000	550
National Stomach Hospital	37	22
Northern Central Hospital	30	20
Pennsylvania Hospital*	315	247
Philadelphia General Hospital*	2,000	1,622
Philadelphia Hospital for Contagious Diseases†	700	...
Philadelphia Lying-in Charity Hospital†	84	45
Philadelphia Maternity Hospital	25	15
Philadelphia Polyclinic Hospital and College*	125	...
Presbyterian Hospital in Philadelphia*	265	192
Preston Retreat	50	...
Rosemont Sanatorium	52	...
Rosine Assn. of Philadelphia	30	...
Rush Hospital for Consumption and Allied Diseases	121	54
Samaritan Hospital*	165	125
St. Agnes Hospital*	220	195
St. Christopher's Hosp. for Child.†	60	30
St. Joseph's Hospital*	151	122
St. Luke's Homeopathic Hospital	55	40
St. Mary's Hospital*	250	200
Stetson Hosp. of Philadelphia*	66	50
West Philadelphia General Homeopathic Hospital	60	2
West Philadelphia Hospital for Women†	117	60
Willis Hospital†	113	63
Woman's Hosp. of Philadelphia*	200	100
Women's Southern Homeo. Hosp.†	40	35
Philipsburg, 3,920—Center		
Cottage State Hospital	40	33
Phoenixville, 10,484—Chester		
Phoenixville Hospital	60	30
Pittsburgh, 588,193—Allegheny		
Allegheny General Hospital*	450	386
Children's Hosp. of Pittsburgh†	100	70
City Tuberculosis Hospital	140	130
Elizabeth Steel Magee Hospital	140	90
Eye and Ear Hospital†	43	30
Homeopathic Medical and Surgical Hospital and Dispensary*	160	145
Mercy Hospital*	560	462
Montefiore Hospital Association of Western Pennsylvania*	61	53
Municipal Hospital	240	75
Passavant Hospital*	153	111
Pittsburgh Hospital*	125	102
Presbyterian Hospital*	180	130
Rosella Foundling and Maternity Hospital†	215	...
South Side Hospital*	215	139
St. Francis Hospital*	550	503
St. John's General Hospital*	200	130
St. Joseph's Hosp. and Disp.*	130	91
St. Margaret's Memorial Hosp.*	118	45
Tuberculosis League Hospital†	110	100
United Presbyterian Memorial Hospital for Children	65	...
Western Pennsylvania Hospital*	675	641
Pittston, 18,497—Luzerne		
Pittston Hospital	65	59
Pottstown, 17,431—Montgomery		
Homeopathic Hospital	35	15
Pottstown Hospital	80	45

	Total Beds	Av. Beds In Use
Pottsville, 21,876—Schuylkill		
Pottsville Hospital	120	77
Punxsutawney, 10,311—Jefferson		
Adrian Hospital	70	56
Punxsutawney Hospital Assn.	35	...
Reading, 107,784—Berks		
Homeopathic Medical and Surgical Hospital	90	50
Neversink Mountain Tuberculosis Sanatorium (T.B.)	65	50
Reading Hospital	136	113
St. Joseph's Hospital	150	90
Renovo, 5,627—Clinton		
Renovo Hospital	25	15
Ridgway, 6,037—Elk		
Elk County General Hospital	45	...
Ridley Park, 1,761—Delaware		
Taylor Hospital	42	36
Roaring Springs, 2,576—Blair		
Nason Hospital	58	30
Rochester, 6,957—Beaver		
Rochester General Hospital	51	48
Sayre, 8,579—Bradford		
People's Co-operative Hospital	50	30
Robert Packer Hospital*	200	120
Scranton, 137,783—Lackawanna		
Hahnemann Hospital*	118	41
Mercy Hospital	35	...
Moses Taylor Hospital	160	96
Scranton Private Hospital	30	...
St. Joseph's Foundling Home and Maternity Hospital	227	...
St. Mary's Keller Mem. Hospital	50	40
State Hospital of the Northern Anthracite Coal Region of Pa.*	185	135
West Mountain Sanatorium	28	...
West Side Hospital	65	52
Selinsville, 1,795—Bucks		
Grand View Medical Association	35	18
Sewickley, 4,955—Allegheny		
Sewickley Valley Hosp. Assn.	44	...
Shamokin, 21,204—Northumberland		
Trevorton, Shamokin and Mount Carmel State Hospital	83	67
Sharon, 21,747—Mercer		
Christian H. Buhl Hospital	125	78
South Bethlehem, 50,358—Northampton		
St. Luke's Hospital*	206	126
Spangler, 2,834—Cambria		
Miners' Hospital of Northern Cambria	53	35
Sunbury, 15,721—Northumberland		
Mary M. Packer Hospital	32	18
Turtetee, 9,025—Allegheny		
Allegheny Valley Hospital	100	86
Titusville, 6,423—Crawford		
Fieldmore Hotel and Sanitarium	75	...
Titusville City Hospital	27	17
Uniontown, 15,693—Fayette		
Uniontown Hospital	110	55
Warren, 14,226—Warren		
Warren General Hospital	97	43
Washington, 21,406—Washington		
City Hospital	60	...
Washington Hospital	80	40
West Chester, 11,717—Chester		
Chester County Hospital	110	81
White Haven, 1,438—Luzerne		
Sunnyrest Sanatorium (T.B.)	67	67
White Haven Sanatorium (T.B.)	200	193
Wilkes-Barre, 73,833—Luzerne		
Mercy Hospital*	150	120
Riverside Hospital	35	20
Wilkes-Barre City Hospital*	250	154
Wyoming Valley Homeo. Hospital	35	29
Wilkinsburg, 24,462—Allegheny		
Columbia Hospital*	181	124
Williamsport, 34,156—Lycoming		
Williamsport Hospital	186	164
Williamsport Private Hospital	27	...
Windber, 6,462—Somerset		
Windber Hospital	83	63
York, 47,573—York		
West Side Sanitarium	32	12
York Hospital and Dispensary	125	70
Youngsville, 1,626—Warren		
House Hospital	100	75
Forty-four General Hospitals of less than 25 beds	694	230
Totals	30,828	19,963

In Pennsylvania the following thirteen counties have no hospitals: Adams, Bedford, Cameron, Clarion, Forest, Fulton, Greene, Juniata, Perry, Pike, Snyder, Sullivan, Wyoming.

RHODE ISLAND	Total Beds	Av. Beds In Use
East Greenwich, 3,426—Kent		
Crawford Allen Memorial Hospital	50	...
Hillsgrove, 1,200—Kent		
St. Joseph's Hospital (T.B.)	50	...
Howard, 400—Providence		
State Infirmary*	500	500
Newport, 30,255—Newport		
Newport Hospital	150	80
Providence, 64,248—Providence		
Memorial Hospital*	72	45

	Total Beds	Av. Beds In Use
Providence, 237,595—Providence		
Dexter Asylum Hospital	50	...
Homeo. Hosp. of Rhode Island	30	21
Hope Private Hospital	30	21
Park Hill Private Hospital	20	13
Providence City Hospital†	200	131
Providence Lying-In Hospital†	100	80
Providence Surgical Hospital	42	29
Rhode Island Hospital*	500	363
St. Joseph's Hospital†	180	146
Woonsocket, 43,496—Providence		
Woonsocket Hospital*	55	39
Four General Hospitals of less than 25 beds	70	21
Totals	2,137	1,679

In Rhode Island the following two counties have no hospitals: Bristol and Washington.

SOUTH CAROLINA

	Total Beds	Av. Beds In Use
Aiken, 4,183—Aiken		
Aiken Hospital	30	20
Anderson, 16,570—Anderson		
Anderson County Hospital	75	60
St. Mary's Hospital	29	29
University Sanitarium	50	...
Camden, 3,920—Kershaw		
Camden Hospital	25	10
Charleston, 67,957—Charleston		
Baker Sanatorium	60	40
Riverside Infirmary	30	...
Roper Hospital*	248	129
St. Francis Xavier Infirmary*	50	30
Chester, 5,557—Chester		
Chester Sanatorium	25	15
Pryor Hospital	90	67
Chick Springs, 56—Greenville		
Chick Springs Sanitarium and Steedly Clinic	90	24
Clinton, 3,707—Laurens		
Clinton Hospital	30	...
Clio Hospital	30	15
Columbia, 37,524—Richland		
Columbia Hospital	140	...
South Carolina Baptist Hospital*	125	...
South Carolina Sanatorium (T.B.)	56	54
Florence, 10,025—Florence		
Florence Infirmary	100	...
Gaffney, 5,868—Cherokee		
City Hospital	40	14
Greenville, 23,127—Greenville		
Greenville City Hospital	100	100
Hopewell Sanatorium (T.B.)	25	15
Greenwood, 6,793—Greenwood		
Greenwood City Hospital	25	13
Kingstree, 2,276—Williamsburg		
Kelley Sanatorium	23	14
North Augusta, 1,742—Aiken		
Pine Heights Sanatorium	25	...
Orangeburg, 7,299—Orangeburg		
Orangeburg Hospital	25	...
Rock Hill, 5,892—York		
Fennel Infirmary	40	...
Spartanburg, 22,638—Spartanburg		
Good Samaritan Hospital	25	...
Spartanburg Sanitarium	30	19
Steedly Hospital	50	35
Sumpter, 9,508—Sumter		
Tuomey Hospital	40	32
Nine General Hospitals of less than 25 beds	151	10
Totals	1,912	721

In South Carolina the following twenty-seven counties have no hospitals: Abbeville, Bamberg, Barnwell, Berkley, Calhoun, Chester-field, Colleton, Darlington, Dillon, Dorchester, Edgefield, Fairfield, Georgetown, Hampton, Harry, Jasper, Lancaster, Lee, Lexington, McCormick, Marion, Newbury, Pickens, Saluda, Union.

SOUTH DAKOTA

	Total Beds	Av. Beds In Use
Aberdeen, 14,537—Brown		
German Baptist Hospital of North and South Dakota	32	...
St. Luke's Hospital	110	60
Chamberlain, 1,503—Brule		
Chamberlain Sanitarium	90	20
Cheyenne Agency, 100—Dewey		
Agency Hospital	32	7
Deadwood, 2,403—Lawrence		
Lawrence County Infirmary	30	...
St. Joseph's Hospital	50	40
Dell Rapids, 1,677—Minnehaha		
Dell Rapids Hospital	30	22
Hot Springs, 1,325—Fall River		
Battle Mountain Sanit. (T.B.)	450	310
Lathrop Sanit. and Hosp.	100	30
Our Lady of Lourdes Hospital	52	32
Huron, 5,362—Beadle		
Samaritan Hospital	30	20
Sprague and Sewell Clinic and Hospital	30	22
Madison, 4,144—Lake		
New Madison Hospital	75	(New)
Mitchell, 5,672—Davison		
St. Joseph's Hospital	50	30
Mobridge, 3,517—Walworth		
Mobridge Hospital	26	14
Pierre, 3,209—Hughes		
St. Mary's Hospital	55	48
Rapid City, 5,777—Pennington		
Methodist Deaconess Hospital	32	28
Sioux Falls, 25,176—Minnehaha		
McKennan Hospital	110	65
Moe Hospital	75	40
Sioux Falls Lutheran Hospital	50	32
Volga, 600—Brookings		
Volga Hospital	25	12
Watertown, 9,469—Codington		
Bartron Hospital	75	40
Lathrop Hospital	65	48
Peabody Hospital	76	52
Yankton, 5,824—Yankton		
Sacred Heart Hospital	85	50
Nine General Hospitals of less than 25 beds	139	37
Totals	1,984	1,079

In South Dakota the following forty-eight counties have no hospitals: Armstrong, Aurora, Bennett, Bon Homme, Buffalo, Butte, Campbell, Charles Mix, Clark, Clay, Corson, Custer, Day, Deuel, Douglas, Faulk, Grant, Gregory, Haakon, Hamlin, Hand, Hanson, Hutchinson, Hyde, Jackson, Jerauld, Jones, Kingsbury, Lyman, McCook, McPherson, Marshall, Mellette, Miner, Moody, Perkins, Potter, Sanborn, Shannon, Stanley, Sully, Todd, Tripp, Turner, Union, Washabough, Washington, Ziebach.

TENNESSEE

	Total Beds	Av. Beds In Use
Chattanooga, 57,895—Hamilton		
Baroness Erlanger Hospital*	150	100
Highlands Sanitarium	30	...
Newell and Newell Sanitarium†	50	25
Pine Breeze Sanitarium (T.B.)	90	45
West Ellis Private Hospital	50	25
Woolford-Johnson Infirmary	25	...
Clarksville, 6,110—Montgomery		
Clarksville Hospital	25	15
Columbia, 5,529—Maury		
King's Daughters' Hospital	30	21
Dyersburg, 6,444—Dyer		
Baird-Dulaney Hospital	75	30
Dyersburg General Hospital	50	12
Greenville, 3,775—Greene		
Greenville Sanitarium and Hosp.	40	30
Jackson, 18,880—Madison		
Creek Sanatorium	25	12
Johnson City, 12,442—Washington		
Memorial Hospital	30	...
Knoxville, 77,818—Knox		
Ft. Sanders Hospital	65	(New)
Knoxville General Hospital*	150	110
Private Hospital	25	...
Riverside Hospital	50	...
Memphis, 162,351—Shelby		
Garth-Massey Hospital	40	...
Jane Terrell Baptist Hospital	110	78
Lucy Brinkley Hospital	50	41
Memphis General Hospital*	250	...
Oaklville Memorial Sanitarium	100	(New)
Presbyterian Home Hospital	50	20
St. Joseph's Hospital*	350	300
Tri-State Baptist Mem. Hosp.*	250	...
Morristown, 5,875—Hamblen		
Morristown General Hospital	30	...
Nashville, 110,345—Davidson		
Davidson County Isolation Hosp.	50	20
Davidson Co. Tuberculosis Hosp.	104	96
Dougal, W. A., Hospital*	75	40
Nashville City Hospital*	120	100
Protestant Hospital*	84	67
St. Thomas Hospital*	200	125
Tvrrace Hospital	30	...
Vanderbilt University Hospital	100	70
Woman's Hospital of the State of Tennessee*	75	60
Presbyterian Home (P.O. only)—Hawkins		
International Printing Pressmen and Ass'ts' Union Sanat. (T.B.)	40	24
Sidgetop, 126—Robertson		
Wetaugs Sanitarium (T.B.)	50	25
Sewanee, 800—Franklin		
General Hodgson Hospital	50	...
Eighteen General Hospitals of less than 25 beds	288	38
Totals	3,446	1,535

In Tennessee the following seventy-four counties have no hospitals: Anderson, Bedford, Benton, Bledsoe, Bradley, Campbell, Cannon, Carroll, Carter, Cheatham, Chester, Claiborne, Clay, Cocke, Coffee, Crockett, Cumberland, Decatur, Dekalb, Dickson, Fayette, Fentress, Gibson, Giles, Grainger, Hancock, Hardeman, Hardin, Henderson, Henry, Hickman, Houston, Humphreys, Jackson, James, Jefferson, Johnson, Lake, Lauderdale, Lewis, Lincoln, Loudon, McMinn, McNairy, Macon, Marion, Marshall, Meigs, Monroe, Moore, Morgan, Obion, Overton, Perry, Pickett, Putnam, Rhea, Roane, Rutherford, Scott, Sequatchee, Sevier, Smith, Stewart, Sumner, Tipton, Trousdale, Unicoi, Union, Van Buren, Wayne, Weakley, White, Williamson,

TEXAS

	Total Beds	Av. Beds In Use
Abilene, 10,274—Taylor		
Alexander Sanitarium	32	...
Amarillo, 15,494—Potter		
St. Anthony's Sanitarium	90	36
Arlington, 3,031—Tarrant		
Knight Templar Hospital	30	15
Austin, 34,876—Travis		
Austin City Hospital	60	40
Seton Infirmary	150	...
Ballinger, 2,767—Runnels		
Halley and Love Sanitarium	30	...
Beaumont, 40,422—Jefferson		
Hotel Dieu*	250	150
Beeville, 1,125—Kenedy		
St. Mary's Sanitarium (T.B.)	60	45
Benham, 6,000—Fannin		
S. B. Allen Memorial Hospital	35	15
Brenham, 5,004—Washington		
Brenham Hospital	26	...
Brownsville, 11,791—Cameron		
Divine Providence Hospital	25	...
Cameron, 4,298—Milam		
Cameron Hospital	60	...
Cleburne, 12,525—Johnson		
Southwestern Sanitarium	30	...
College Station (P.O. only)—Brazos		
Hosp. A. and M. College of Texas	50	30
Corsicana, 11,350—Navarro		
Physicians and Surgeons Hospital	40	20
Cuero, 3,671—DeWitt		
Burns Hospital	30	19
J. M. Reuss Memorial Hospital	35	...
Dalhart, 3,589—Dallam		
Trans-Canadian Sanitarium	30	15
Dallas, 158,976—Dallas		
Parkland City Hospital	170	...
St. Paul's Sanitarium*	310	...
Texas Baptist Mem. Sanitarium*	250	...
Woodland Sanitarium (T.B.)	130	60
Denison, 17,065—Grayson		
Denison Hospital	50	10
El Paso, 77,343—El Paso		
El Paso County Hospital	100	70
El Paso Sanatorium (T.B.)	30	...
Hendricks-Laws Sanat. (T.B.)	77	75
Human Sanatorium (T.B.)	75	70
Hotel Dieu Sisters Hospital	100	75
Long's Sanatorium (T.B.)	60	(New)
Providence Hospital	50	...
Ralston Hospital	75	...
Southern Baptist Sanat. (T.B.)	40	...
Forney, 1,340—Kaufman		
Forney Sanitarium	25	14
Ft. Worth, 106,482—Tarrant		
All Saints Hospital	44	...
City and County Hospital	60	30
Ft. Worth Free Baby Hospital	25	14
Harris Sanitarium	50	40
Johnson-Ball Hospital	40	25
Protestant Hospital	90	(New)
Rountree Sanitarium	35	...
St. Joseph's Infirmary	150	95
Dr. Walker's Sanitarium	25	...
Galveston, 44,255—Galveston		
Hubbard Sanitarium	40	...
John Sealy Hospital*	320	201
St. Mary's Infirmary*	180	115
Gruenville, 12,204—Hunt		
Cantrell Hospital	35	...
Houston, 138,276—Harris		
Baptist Sanitarium*	112	95
Southern Pacific Hospital*	100	60
St. Joseph's Infirmary*	300	15
Kerrville, 3,585—Kerr		
Kerrville Sanitarium Hospital	30	...
Recor Sanitarium	30	15
Thompson Sanatorium (T.B.)	54	50
Kingsville, 4,772—Kleberg		
Kleberg County Hospital	40	...
Laredo, 22,710—Webb		
Mercy Hospital	30	...
Lubbock, 4,051—Lubbock		
Lubbock Sanitarium	40	25
West Texas Sanitarium	30	...
Lufkin, 4,878—Angelina		
Angelina County Hospital	53	37
Marlin, 4,310—Falls		
Allen Hospital	25	18
Torbett Sanatorium	30	20
Marshall, 14,271—Harrison		
Texas and Pacific Railway Employees Hospital	90	65
Orange, 9,212—Orange		
Frances Anne Lutcher Hospital	61	35
Palestine, 11,039—Anderson		
International and Great Northern Railroad Employees Hospital	80	33
Paris, 15,040—Lamar		
W. S. Allen Hospital	25	20
Sanitarium of Paris	50	...
St. Joseph's Infirmary	50	30
Plainview, 3,900—Hale		
Plainview Sanitarium	30	20
Port Arthur, 22,257—Jefferson		
Mary Gates Memorial Hospital	30	30
Quanah, 3,021—Hardeman		
Quanah Hospital	35	...

	Total Beds	Av. Beds In Use
San Angelo, 9,399—Tom Green		
Cornick Bungalows (T.B.)	50	35
San Angelo Sanatorium (T.B.)	35	33
St. John's Sanitarium	30	...
San Antonio, 161,379—Bexar		
Baylor Hospital	50	38
Bexar County Hospital	200	...
Dr. Kenney's Sanatorium	105	50
Grace Lutheran Sanat. (T.B.)	40	33
Lee Surgical Hospital	25	...
Physicians and Surgeons Hosp.	75	60
R. B. Green Methodist Hospital*	200	130
Santa Rosa Infirmary*	150	135
Sherman, 15,551—Grayson		
Sherman Hospital	66	50
St. Vincent's Sanitarium	100	38
Stamford, 2,704—Jones		
Stamford Sanitarium	30	12
Taylor, 5,968—Williamson		
Dr. Floeckinger's Sanitarium	25	15
Temple, 11,033—Bell		
King's Daughters' Hospital*	75	50
Santa Fe Hospital*	120	47
Temple Sanitarium*	115	93
Texarkana, 12,181—Bowie		
Texarkana Sanit. and Hosp.	50	37
Von Ormy, 42—Bexar		
Von Ormy Cottage Sanit. (T.B.)	40	32
Waco, 38,500—McLennan		
Providence Sanitarium*	150	100
Weatherford, 6,393—Parker		
Weatherford Sanitarium	35	15
Wichita Falls, 40,079—Wichita		
Wichita General Hospital	40	36
Forty-nine hospitals of less than 25 beds	781	113
Totals	7,557	2,962

In Texas the following 127 counties have no hospitals: Andrews, Armstrong, Atascosa, Austin, Bailey, Bandera, Bastrop, Baylor, Blanco, Borden, Bosque, Brazoria, Brewster, Briscoe, Brown, Burleson, Burnet, Calhoun, Callahan, Camp, Carson, Cass, Castro, Chambers, Cherokee, Clay, Coke, Coleman, Collingsworth, Colorado, Comanche, Concho, Coryell, Cottle, Crane, Crockett, Crosby, Culberson, Dawson, Deaf Smith, Delta, Denton, Dimmit, Duval, Ector, Edwards, Erath, Fayette, Fisher, Floyd, Foard, Fort Bend, Franklin, Freestone, Frio, Gaines, Gillespie, Glasscock, Goliad, Gray, Gregg, Grimes, Hale, Hamilton, Hansford, Hardin, Hartley, Haskell, Hemphill, Henderson, Hidalgo, Hill, Hood, Hopkins, Houston, Howard, Hudspeth, Hutchinson, Irion, Jack, Jackson, Jasper, Jeff Davies, Jim Hogg, Jim Wells, Kames, Kent, Kimble, King, Kinney, Knox, Lamb, Lampasas, La Salle, Lee, Leon, Liberty, Limestone, Lipscomb, Live Oak, Llano, Loving, Lynn, McCulloch, McMullen, Madison, Marion, Martin, Mason, Menardo, Maverick, Medina, Menard, Midland, Mills, Mitchell, Montague, Montgomery, Moore, Morris, Motley, Nueces, Newton, Nolan, Ochiltree, Oldham, Palo Pinto, Panola, Parmer, Pecos, Polk, Presidio, Rains, Randall, Reagan, Red River, Reeves, Refugio, Roberts, Robertson, Rockwall, Rusk, Sabine, San Augustine, San Jacinto, San Patricio, San Saba, Schleicher, Scurry, Shackleford, Shelby, Sherman, Somervell, Starr, Stephens, Sterling, Stonewall, Sutton, Swisher, Terrell, Terry, Throckmorton, Titus, Tyler, Upshur, Upton, Uvalde, Valverde, Van Zandt, Victoria, Walker, Waller, Ward, Wheeler, Wilbarger, Willacy, Wilson, Winkler, Wise, Wood, Yoakum, Young, Zapata, Zavala.

UTAH

	Total Beds	Av. Beds In Use
Logan, 9,439—Cache		
Utah-Idaho Hospital	60	...
Ogden, 32,804—Weber		
Thomas D. Dee Mem. Hospital*	75	62
Price, 2,204—Carbon		
Carbon County Hospital	25	18
Provo, 10,303—Utah		
Provo General Hospital	50	30
Salina, 1,451—Sevier		
Salina Hospital	25	9
Salt Lake City, 118,110—Salt Lake		
Groves Latter-Day Saints Hosp.*	195	161
Holy Cross Hospital*	250	130
Salt Lake County Hospital*	125	60
St. Mark's Hospital*	155	130
Six General Hospitals of less than 25 beds	85	20
Totals	1,045	609

In Utah the following twenty counties have no hospitals: Beaver, Daggett, Davis, Duchesne, Emery, Garfield, Grand, Iron, Kane, Millard, Morgan, Piute, Rich, San Juan, Sanpete, Summit, Tooele, Wasatch, Washington, Wayne.

VERMONT

	Total Beds	Av. Beds In Use
Barre, 10,898—Washington		
Barre City Hospital	30	17
Bellows Falls, 4,892—Windham		
Rockingham General Hospital	35	20
Bennington, 8,802—Bennington		
Henry W. Putnam Mem. Hosp.	55	34
Brattleboro, 7,324—Windham		
Brattleboro Memorial Hospital	35	25
Burlington, 22,779—Chittenden		
Mary Fletcher Hospital*	130	103
Montpelier, 7,125—Washington		
Heaton Hospital	50	30
Pittsford, 1,350—Rutland		
Vermont Sanatorium (T.B.)	67	61
Proctor, 2,096—Rutland		
Proctor Hospital	35	14
Rutland, 14,954—Rutland		
Rutland Hospital	50	40
St. Albans, 7,806—Franklin		
St. Albans Hospital	50	27
St. Johnsbury, 7,163—Caledonia		
Brightlook Hospital Assn.	33	27
Wilmington, 4,952—Chittenden		
Fanny Allen Hospital*	70	50
Ten General Hospitals of less than 25 beds	130	22
Totals	749	449

In Vermont the following four counties have no hospitals: Addison, Essex, Grand Isle, Lamoille.

VIRGINIA

	Total Beds	Av. Beds In Use
Abingdon, 2,532—Washington		
George Ben Johnston Mem. Hosp.*	50	22
Alexandria, 15,000—Alexandria		
Alexandria Hospital	50	40
Brook Hill, 20—Henrico		
Pine Camp Hospital (T.B.)	40	28
Bartonville, 514—Mattoway		
Piedmont Sanatorium (T.B.)	70	31
Catawba Sanatorium, 175—Roanoke		
Catawba Sanatorium (T.B.)	265	200
Charlottesville, 10,688—Albemarle		
Blue Ridge Sanatorium (T.B.)	120	(New)
Martha Jefferson Hospital	40	25
City Point, 400—Prince George		
Du Pont Hospital	70	...
Clifton Forge, 5,150—Alleghany		
Chesapeake and Ohio Railway Hospital†	75	48
Danville, 21,893—Pittsylvania		
Danville General Hospital	75	51
Hilltop Sanatorium (T.B.)	27	...
Fredericksburg, 5,023—Spotsylvania		
Mary Washington Hospital	38	23
Hampton, 5,808—Elizabeth City		
Hampton Training School for Nurses and Dixie Hospital	65	...
Harrisonburg, 5,878—Rockingham		
Rockingham Memorial Hospital	35	25
Hollins, 50—Roanoke		
Susanna Memorial Infirmary of Hollins College	26	...
Lynchburg, 41,883—Campbell		
Lynchburg Hospital	25	15
Lynchburg, 41,883—Campbell		
Lynchburg Hosp. and City Home	90	60
Marshall Lodge Mem. Hospital	50	40
Newport News, 35,596—Warwick		
Riverside Hospital†	72	60
Riverside Hospital and Training School Assn.	50	...
Norfolk, 115,777—Norfolk		
Hospital of St. Vincent de Paul*	250	200
Norfolk Contagious Disease Hosp.	120	15
Norfolk City Home and Hospital	100	...
Norfolk Protestant Hospital*	115	85
Sarah Leigh Hospital†	85	80
St. Christopher's Hospital	25	20
Ocean View, 500—Norfolk		
Parker Hospital	25	22
Petersburg, 23,347—Dinwiddie		
Petersburg Hospital	80	48
Portsmouth, 54,387—Norfolk		
King's Daughters' Hospital	75	55
Richlands, 1,171—Tazewell		
Mattie Williams Hospital	25	12
Richmond, 171,667—Henrico		
City Home Hospital	340	320
Grace Hospital†	50	35
Hygeia Sanatorium	50	30
Johnston-Willis Sanatorium†	70	42
The Dooley Hospital for Children	50	36
Memorial Hospital*	200	150
Saint Phillip Hospital	155	62
Retreat for the Sick*	60	...
Richmond Eye, Ear, Nose and Throat Infirmary	27	...
Sheltering Arms Hosp.*	52	42
St. Elizabeth's Hospital†	62	40
St. Luke's Hospital†	90	65
Stuart Circle Hospital*	65	54
Virginia Hospital*	125	78
Westbrook Sanatorium	100	84
Roanoke, 41,929—Roanoke		
Jefferson Hospital*	85	60
Lewis Gale Hospital†	56	36
Roanoke Hospital Assn.	60	30
Shenandoah Hospital	35	22
St. Charles Hospital	30	12
Suffolk, 6,125—Nansemond		
Mount Sinai Sanatorium (T.B.)	47	...
South Boston, 4,330—Halifax		
Halcyon Hospital	30	15
Staunton, 10,317—Augusta		
King's Daughters' Hospital	34	30
Suffolk, 6,125—Nansemond		
Lake View Hospital	50	38
Virginia Hospital	35	6
University, 1,000—Albemarle		
University of Virginia Hospital*	200	155
Virginia Beach, 946—Princess Anne		
Virginia Beach Infant Sanitarium	40	...
Winchester, 5,863—Frederick		
Winchester Memorial Hospital	60	40
Thirteen General Hospitals of less than 25 beds	207	55
Totals	4,768	2,817

In Virginia the following seventy-one counties have no hospitals: Accomac, Amelia, Amherst, Appomattox, Bath, Bedford, Bland, Botetourt, Brunswick, Buchanan, Buckingham, Carolina, Carroll, Charles City, Charlotte, Chesterfield, Clarke, Craig, Culpepper, Cumberland, Dickenson, Essex, Fairfax, Fauquier, Fluvanna, Franklin, Giles, Gloucester, Goochland, Grayson, Greene, Greenville, Hanover, Henry, Highland, Isle of Wight, James City, King and Queen, King George, King William, Lancaster, Lee, Louisa, Madison, Mathews, Mecklenburg, Middlesex, Montgomery, Nelson, New Kent, Northampton, Northumberland, Orange, Page, Powhatan, Prince Edward, Prince William, Rappahannock, Richmond, Russell, Scott, Shenandoah, Smyth, Southampton, Stafford, Surry, Sussex, Warren, Westmoreland, Wythe, York.

WASHINGTON

	Total Beds	Av. Beds In Use
Aberdeen, 15,337—Grays Harbor		
Aberdeen General Hospital	75	42
St. Joseph's Hospital	70	...
Arlington, 2,020—Snohomish		
Arlington General Hospital	25	10
Auburn, 5,102—King		
Taylor-Lacey Hospital	50	(New)
Bellingham, 23,570—Whatcom		
St. Joseph's Hospital	100	25
St. Luke's Hospital	50	30
Burlington, 1,305—Skagit		
Burlington General Hospital	30	...
Centralia, 7,800—Lewis		
Scace Hospital	40	...
Chehalis, 4,882—Lewis		
St. Helen's Hospital	50	...
Colfax, 3,627—Whitman		
St. Ignatius Hospital	65	3
College Place, 500—Walla Walla		
Walla Walla Sanitarium	30	15
Colville, 1,706—Stevens		
Mt. Carmel Hospital	30	...
Ellensburg, 3,510—Kittitas		
Ellensburg General Hospital	30	...
Everett, 27,644—Snohomish		
Everett General Hospital	50	35
Providence Hospital	70	65
Hoquiam, 10,058—Grays Harbor		
Hoquiam General Hospital	100	40
Lake View, 150—Pierce		
Mountain View Sanatorium	118	70
Mt. Vernon, 3,241—Skagit		
Mt. Vernon General Hospital	25	15
Olympia, 6,837—Thurston		
St. Peter's Hospital	115	...
Pt. Angeles, 5,231—Clallam		
Pt. Angeles General Hospital	50	32
Port Orchard, 1,350—Kitsap		
Sunnyvale Hospital	25	7
Pt. Townsend, 2,847—Jefferson		
St. John's Hospital	60	...
Raymond, 4,360—Pacific		
Riverview Hospital	50	18
Richmond Highlands (P.O. only)—King		
Firland Sanatorium (T.B.)	200	170
Roslyn, 2,675—Kittitas		
Roslyn-Cle Elum Benedcial Co.	35	25
Seattle, 315,652—King		
Children's Orthopedic Hospital	60	...
Columbus Sanitarium	125	65
King County Hospital*	200	150
Labadie Hospital	65	35
Minor Private Hospital	75	65
Providence Hospital	300	212
Pulmonary Hosp. of Seattle (T.B.)	75	60
Reliance Hospital	31	...
Seattle City Hospital*	100	80
Seattle General Hospital*	130	125
Swedish Hospital	130	...
Snohomish, 2,885—Snohomish		
Maverest Sanatorium (T.B.)	40	37

V. 19

	Total Beds	Av. Beds In Use
South Bend, 3,602—Pasco		
South Bend General Hospital	35	15
Spangle, 291—Spokane		
Spokane County Infirmary	225	...
Spokane, 104,437—Spokane		
Marie Board Deaconess Hosp.*	105	83
Edgecliff Sanatorium (T.B.)	140	130
Kearney Sanitarium	25	...
Rivercrest	100	...
Sacred Heart Hospital*	300	275
Salvation Army Rescue Home and Maternity Hospital	40	...
St. Luke's Hospital*	75	...
Tacoma, 96,965—Pierce		
City Contagious Hospital	50	...
Northern Pacific Beneficial Assn.	150	75
Pierce County Hospital	100	77
St. Joseph's Hospital	200	16
Tacoma General Hospital	150	120
Vancouver, 12,555—Clarke		
St. Joseph's Hospital	104	...
Walla Walla, 15,503—Walla Walla		
St. Mary's Hospital	100	...
Walla Walla Hospital	35	...
Wenatchee, 6,224—Chelan		
Central Washington Deaconess Hospital	30	22
Wenatchee General Hospital	30	...
Yakima, 36,282—Yakima		
St. Elizabeth's Hospital*	165	125
Twenty-Eight General Hospitals of less than 25 beds	425	135
Totals	5,583	2,615

In Washington the following fifteen counties have no hospitals: Adams, Asotin, Benton, Cowlitz, Douglas, Franklin, Garfield, Grant, Island, Klickitat, Lincoln, Mason, Pend Oreille, San Juan, Wahkiakum.

WEST VIRGINIA

	Total Beds	Av. Beds In Use
Beckley, 2,101—Raleigh		
Beckley Hospital	100	60
Bluefield, 15,191—Mercer		
Bluefield Sanitarium	50	28
St. Luke's Hospital	50	33
Buckhannon, 3,795—Upshur		
Forman Surgical Hospital	32	18
Charleston, 39,369—Kanawha		
Charleston General Hospital*	100	60
Hill Crest Sanatorium (T.B.)	25	19
Kanawha Valley Hosp. and Sanit.	65	...
McMillan Hospital	50	23
St. Francis Hospital	30	...
Charlestown, 2,662—Jefferson		
Charlestown General Hospital	30	...
Clarksburg, 27,869—Harrison		
Koontz Hospital	40	30
St. Mary's Hospital	125	70
Davis, 1,491—Tucker		
Alleghany Heights Hospital	35	15
Elkins, 6,765—Randolph		
Davis Memorial Hospital	50	30
Elkins City Hospital	35	...
Elm Grove, 1,699—Ohio		
View Point Tuberculosis Sanit.	35	...
Fairmont, 17,251—Marion		
Cook Hospital	70	45
Fairmont Hospital No. 21	55	36
Fayetteville, 699—Fayette		
Lafayette Sanitarium	100	...
Glen Dale, 300—Marshall		
Reynolds Memorial Hospital	50	50
Hansford, 250—Kanawha		
Sheltering Arms Hospital*	110	70
Hinton, 3,626—Summers		
Hinton Hospital	75	40
Huntington, 50,177—Cabell		
Barnett Hospital	40	16
Chesapeake and Ohio Railway Hospital	75	38
Guthrie Hospital	75	50
Huntington General Hospital	30	...
Kessler-Hatfield Hospital	100	...
New Huntington General Hospital	50	...
Keyser, 6,003—Mineral		
Hoffman Hospital	25	18
Logan, 2,908—Logan		
Logan Hospital	60	30
Landolt (P. O. Switz)—Logan		
Landale Hospital	28	15
Marlinton, 1,177—Pocahontas		
Marlinton General Hospital and Sanitarium	35	...
Martinsburg, 12,515—Berkeley		
City Hospital	100	...
King's Daughters' Hospital	40	...
Shenandoah Valley Sanatorium	65	...
McKendrie, 75—Fayette		
McKendrie Hospital No. 2	45	30
Montgomery, 2,150—Fayette		
Coal Valley Hospital	75	(New)
Morgantown, 12,117—Monongalia		
City Hospital	65	23
Oakhill, 764—Fayette		
Oak Hill Hospital	50	31
Parkersburg, 20,050—Wood		
Parkersburg City Hospital	30	...
St. Joseph's Hospital	60	4
Princeton, 6,224—Mercer		
Princeton General Hospital	30	...
Richwood, 4,231—Nicholas		
McClung Hospital	25	10
Spencer, 1,765—Roane		
West Virginia Methodist Episcopal Hospital	34	17
Welch, 3,223—McDowell		
Welch Hospital No. 1	100	50
Wheeling, 56,208—Ohio		
Ohio Valley General Hospital*	155	119
Wheeling Hospital	220	150
Nine General Hospitals of less than 25 beds	131	2
Totals	3,185	1,210

In West Virginia the following twenty-eight counties have no hospitals: Barbour, Boone, Brooke, Calhoun, Clay, Doddridge, Gilmer, Grant, Hampshire, Hancock, Hardy, Jackson, Lewis, Lincoln, Mason, Mingo, Monroe, Morgan, Pendleton, Pleasants, Preston, Putnam, Ritchie, Wayne, Webster, Wetzel, Wirt, Wyoming.

WISCONSIN

	Total Beds	Av. Beds In Use
Appleton, 19,561—Outagamie		
St. Elizabeth's Hospital	70	68
Ashland, 11,334—Ashland		
Ashland General Hospital	35	26
St. Anthony's Hospital	30	...
St. Joseph's Hospital*	200	75
Bayfield, 1,441—Bayfield		
Pureair (T.B.)	35	(New)
Beloit, 21,284—Rock		
Beloit General Hospital	30	20
Beloit Hospital	50	20
Chippewa Falls, 9,130—Chippewa		
St. Joseph's Hospital	160	130
Dodgeville, 1,791—Iowa		
St. Joseph's Hospital	51	25
Eau Claire, 20,929—Eau Claire		
Luther Hospital	115	87
Mt. Washington Sanat. (T.B.)	40	34
Sacred Heart Hospital	150	125
Fond du Lac, 23,427—Fond du Lac		
St. Agnes Hospital*	150	100
Green Bay, 31,017—Brown		
St. Mary's Hospital	100	65
St. Vincent's Hospital	200	100
Wisconsin Deaconess Hospital	50	45
Kenosha, 40,472—Kenosha		
Kenosha Hospital	75	53
St. Catherine's Hospital and Sanitarium	100	70
La Crosse, 30,393—La Crosse		
La Crosse Lutheran Hospital*	100	70
La Crosse Public Hospital	50	...
St. Francis Hospital*	210	120
Little Chute, 2,017—Outagamie		
Riverview Sanatorium (T.B.)	32	28
Madison, 38,378—Dane		
Madison General Hospital	115	79
Madison Sanitarium	50	34
St. Mary's Hospital*	65	49
Manitowoc, 17,563—Manitowoc		
Holy Family Hospital	65	...
Marinette, 15,616—Marinette		
Marinette and Menominee Hospital Company	65	...
Marshfield—7,304—Wood		
St. Joseph's Hospital*	180	90
Merrill, 8,068—Lincoln		
Ravn Hospital	25	...
Milwaukee, 457,147—Milwaukee		
Columbia Hospital*	85	56
Evangelical Deaconess Hospital	51	42
Hanover General Hospital	70	50
Johnson Emergency Hospital	40	35
Milwaukee Children's Hospital	60	54
Milwaukee Hospital*	162	102
Milwaukee Infants Hospital	50	30
Milwaukee Maternity and General Hospital	80	52
Misericordia Hospital	50	...
Mt. Sinai Hospital*	100	85
Riverside Sanitarium	50	...
Sacred Heart Sanitarium	100	...
Social Workers Tuberculosis Sanatorium	30	...
South View Municipal Hospital	187	85
St. Joseph's Hospital*	134	125
St. Mary's Hospital	199	136
St. Vincent's Infant Asylum and Maternity Hospital	175	...
Trinity Hospital†	155	110
Monroe, 4,793—Green		
Evangelical Deaconess Hospital	32	20
Neenah, 7,171—Winnebago		
Theda Clark Memorial Hospital	35	33
Oconomowoc, 3,391—Waukesha		
Waldheim Park Sanatorium	75	50
Onalaska, 1,662—La Crosse		
Oak Forest Sanat. (T.B.)	40	30
Oshkosh, 33,162—Winnebago		
St. Mary's and Mercy Hospitals†	140	80
Platteville, 4,353—Grant		
Wilson Cunningham Hospital	30	22
Plymouth, 3,415—Sheboygan		
Plymouth Hospital	25	...
Portage, 5,582—Columbia		
St. Saviors General Hospital	37	22
Prairie du Chien, 3,537—Crawford		
Prairie du Chien Sanitarium and Hospital	75	50
Racine, 58,593—Racine		
St. Luke's Hospital	90	75
St. Mary's Hospital	80	75
Sunnyrest Sanitarium (T.B.)	37	...
Rhinelander, 6,654—Oneida		
St. Mary's Hospital	35	...
Rice Lake, 4,057—Barron		
Lakeside Methodist Hospital	27	(New)
Sheboygan, 30,955—Sheboygan		
St. Nicholas Hospital	100	100
Sparta, 4,466—Monroe		
St. Mary's Hospital	100	60
Stevens Point, 11,371—Portage		
River Pines Sanat. (T.B.)	44	40
St. Michael's Hospital	35	25
Sturgeon Bay, 4,583—Door		
Egeland Hospital	25	18
Superior, 32,624—Douglas		
Isolation Hospital	26	...
St. Francis Hospital	75	...
St. Mary's Hospital	150	100
Tomahawk, 2,501—Lincoln		
Sacred Heart Hospital	60	24
Waterbury, 2,295—DeKorra		
St. Mary's Hospital	45	35
Waukesha, 12,558—Waukesha		
The Spa	90	...
Wausau, 18,661—Marathon		
Mount View, Marathon County Sanatorium (T.B.)	50	38
St. Mary's Hospital	52	40
Wausau Hospital	25	20
Wauwatosa, 5,818—Milwaukee		
Blue Mound Sanat. (T.B.)	100	85
Milwaukee County Hospital*	300	240
Muirdale Sanatorium for the Treatment of Tuberculosis	350	330
West De Pere[1]—Brown		
Hickory Grove Sanat. (T.B.)	40	36
Whitelaw, 275—Manitowoc		
Maple Creek Sanat. (T.B.)	30	23
Wisconsin Rapids, 6,821—Wood		
Riverview Hospital	30	20
Forty-Eight General Hospitals of less than 25 beds	746	185
Totals	7,570	4,134

In Wisconsin the following twenty-six counties have no hospitals: Adams, Buffalo, Burnett, Clark, Florence, Green Lake, Iron, Jackson, Kewanee, Lafayette, Marquette, Oconto, Ozaukee, Pepin, Pierce, Richland, Rusk, Saint Croix, Taylor, Trempealeu, Vernon, Vilas, Washburn, Washington, Waupaca, Washara.

WYOMING

	Total Beds	Av. Beds In Use
Casper, 11,447—Natrona		
Casper Private Hospital	50	35
Cheyenne, 13,829—Laramie		
St. John's Hospital	70	51
Kemmerer, 1,517—Lincoln		
Lincoln County Miners Hospital	60	31
Laramie, 6,391—Albany		
Ivanson Memorial Hospital	50	36
Rock Springs, 6,456—Sweetwater		
Wyoming General Hospital	65	40
Sheridan, 5,175—Sheridan		
Wyoming General Hospital	65	40
Thermopolis, 2,005—Hot Springs		
McGannon Sanitarium	40	...
Wheatland, 1,356—Platte		
Wheatland Hospital	75	57
Fourteen General Hospitals of less than 25 beds	210	42
Totals	702	281

In Wyoming the following seven counties have no hospitals: Campbell, Crook, Johnson, Niobrara, Park, Sweetwater, Washakie.

1. Small village, postoffice is De Pere.

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SATURDAY, APRIL 16, 1921

HOSPITAL SERVICE IN THE UNITED STATES

We publish this week statistics regarding 6,152 hospitals, sanatoriums and related institutions in the United States. The figures are based on reports from superintendents, directors or other executives of the hospitals or, of the government hospitals, from the officers who are in position to give the facts. The figures, therefore, are obtained from official sources and are reliable. Our acknowledgments are due to all who have contributed to the success of the survey. The various state advisory committees on hospitals also have inspected many of the hospitals and have aided in collecting the data.

HOSPITALS PROVIDING GENERAL CARE

The statistics deal mainly with the most important group of hospitals: the private, general or special hospitals open to the public for the general care of the sick. A list of the 2,926 having twenty-five or more beds each is published, in which, for each hospital, are given the name of the institution; the name and population of the town or city and the name of the county in which it is located; the total bed capacity, and the average number of beds in use. There are also 1,087 hospitals in this group which have less than twenty-five beds each. The names of these are not published, but the total number in each state is given, together with the total bed capacity and the average number of beds in use. Following the list for each state are given the number and names of the counties in which there are no hospitals for the general care of the sick.

HOSPITALS APPROVED FOR INTERN TRAINING

Of the 2,926 hospitals providing general service having twenty-five or more beds, 483 have been approved for the training of interns. Those marked with an asterisk (*) are general hospitals, while those marked with a dagger (†) are approved for interns who wish to secure training along the particular specialty which the hospital emphasizes. The fact that a hospital is not approved for the training of interns should not be misinterpreted to mean that the hospital is not providing satisfactory care for its patients. On the contrary, there are many hospitals rendering a very excellent service to their patients, which do not seek or utilize interns, and which are undoubtedly worthy of approval as non-intern hospitals.

FACTORS INDICATING NEED AND PRESENT SUPPLY OF HOSPITALS

Four factors must be considered in the study of these statistics to determine accurately whether or not a district, state or community has an adequate supply of hospitals. These are (*a*) the ratio of square miles of area to each hospital; (*b*) the ratio of hospital beds to population; (*c*) the percentage of beds on the average in use, and (*d*) the percentage of counties which have no hospitals. There are at present 4,013 of these hospitals in the United States with a total of 311,159 beds—one bed to every 340 persons—and of these beds 206,024, or 67 per cent., are in use. There is one hospital on the average to every 741 square miles, ranging from one to every 42 square miles in Massachusetts to one to every 5,780 miles in Nevada. The situation in Nevada appears to be less serious, however, than in Mississippi, where there is one hospital to every 1,104 square miles. The latter state is more thickly populated and has only one hospital bed to every 1,054 persons, while Nevada has one bed to every 139. Of the 3,027 counties in all states, 1,695, or 56 per cent., have no hospitals. Table 3 shows the supply for all states arranged by districts. The North Atlantic district is fairly well supplied with hospitals as compared with the South Central and the Western districts. But a study of the figures shows that in the North Atlantic, as well as in other districts, owing to a poor distribution, some portions have an abundance of hospitals while other sections are entirely lacking.

HOSPITALS UNEQUALLY DISTRIBUTED

As to the adequate proportion of hospital beds to population, estimates by hospital experts state that there should be one bed for from 300 to 500 persons. These statistics show one bed to every 340 persons; but since 56 per cent. of all counties are without hospitals, it is evident that the distribution is at fault. With a proper distribution, furthermore, it is probable that the proportion of beds in use would be much larger than 67 per cent., as shown in the statistics. Another evidence of poor distribution is made possible by these statistics: For example, an investigation of the supply in Delaware shows that the seven hospitals in that state are all located in the extreme north end—a part where the public has also the easiest access by rail to the hospitals of Baltimore and Philadelphia—while four fifths of the state have no hospitals.

The lesson to be learned from these figures is that in the establishing of hospitals hereafter, communities should be selected which are not already abundantly or overabundantly supplied. These statistics will be of service in showing which communities are in greatest need of hospitals.

NEUROLOGY IN ART

In 1861, the medical historian K. F. X. Marx published an essay of seventy-four pages on medicine in the graphic arts, containing the first list of paintings and engravings relating to medicine. Unnoticed in its time, this pamphlet opened a new pathway of research which has since been retraced and extended by many investigators, more particularly in the subsequent lists made by Sudhoff, in the well known illustrated books of Charcot, Holländer, Müllerheim and Parkes-Weber, and in various magazine articles of more recent date. The subject is one of immense interest to the physician who loves his profession, for paintings and engravings, old and new, tell more about the physician's social and professional status in the different periods than does the printed literature. Many diseases have been accurately represented (without diagnosis tag) in the paintings and sculptures of the past.

At a meeting of the Medical Society of Hamburg, Nov. 30, 1920, Dr. Wilhelm Weygandt [1] gave an exhaustive account of the illustration of neurology and psychiatry in the graphic arts. His lecture was illustrated with about 100 lantern slides. Even prehistoric and primitive artists, he points out, noted pathologic appearances now regarded as characteristic of civilization, e. g., the obesity of the "Venus of Willendorf," the representation of facial paralysis and of the act of trephining in Peruvian pottery, and micromelia (achondroplasia) in the Egyptian god Bes and in the bronze figures made by the African savages of Benin. The Japanese employed for decorative purposes such pathologic motives as turricephaly, hydrocephalus, dancing lunatics, "running amuck," etc., motives which are lacking in the art of classical antiquity. In the middle ages, the hysterical *arc en cercle* in the figure of Salome on the bronze door of San Zeno (Verona) is noteworthy. Figurations of this kind are abundant in the multiform art of the Renaissance period—for example, the representation of ecstasy in Raphael's Transfiguration, Ribera's picture of unilateral paralysis in a beggar-boy, the cretins, idiots and hydrocephalic dwarfs of Velasquez, Dürer's Melancholia, Careño de Miranda's fat girl (dystrophia adiposogenitalis), and Rubens' representations of epilepsy, demoniac possession, microcephalus and alcoholism. Drunkenness is a favorite theme of all the Dutch painters from Rembrandt and Hals to Jan Steen, Teniers, Jordaens and Molenaer, and latterly of Hogarth (Rake's Progress, Gin Lane). Gerard Dow's love-sick girls (*mal d'amour*) have sometimes the facies of exophthalmic goiter. Insanity is featured in the works of Goya, in Kaulbach's *Narrenhaus*, and by Géricault, Wiertz and Riepin. Modern decadent art has for its avowed aim the purposeful deformation of objects in order to intensify emotional expression. The subjective visual phenomena (entoptic appearances) of Purkinje and Johannes Müller are objectified in the paintings of Picasso and others. It is known that the drawings of the insane are singularly like those of primitive man, and the paintings of Cubists and Futurists, Weygandt thinks, have features common to the art productions of children, and of primitive and insane people. The use of insignificant objects, such as newspaper clippings, buttons, thumb-tacks and baby carriage wheels, as decorative motives, Weygandt regards as further evidence of artistic impotence and mass-psychology, particularly of the snobbish tendency of artists, critics and exhibitors alike, to encourage any eccentric thing that seems in "the spirit of the times."

A complete inventory or card index of the graphic illustrations of neurology, along the lines of Weygandt's paper, and inclusive of such little known pictures as Rops' drawings of neurotics or MacCameron's wonderful absinth drinkers in the Corcoran Gallery at Washington, would be an interesting line for some art-loving neurologist to follow up. It is a curious fact that since the days of the Dutch painters, few great artists have consciously delineated a sick or neurotic patient as such, although physicians of artistic talent have made atlases of pathologic illustration in plenty. The subject of endocrinology in art has been treated in an article in the Spanish journal *Plus Ultra*, an abstract of which will be found in THE JOURNAL, Aug. 2, 1919, page 374.

1. Weygandt, Wilhelm: Deutsch. med. Wchnschr., Soc. Proc. 47: 171, 1921.

VARIATIONS IN THE ANTISCORBUTIC POTENCY OF MILK

Milk is so universally used in this country as an article of diet that every item of scientific information regarding it deserves attention until its possible significance can be evaluated. A few years ago the questions of gross chemical composition—of percentages of protein, fat and carbohydrate—chiefly attracted consideration. Subsequently the bacteriology of milk and its possible rôle as a carrier of disease came to the front as subjects for serious discussion. The most recent interest has centered in the problem of the vitamin content of milk and products prepared from it.

Milk normally contains all of the food potencies currently designated as vitamins A, B and C. Physiologic experts are nowadays being asked repeatedly regarding the possible effects of manipulation either in the creamery, the factory or the home on these nutritive qualities of milk. Is milk deteriorated in any way by such processes as drying, cooking or canning? Our readers are frequently brought face to face with these questions in a practical way. Pasteurization, for example, has achieved so much in limiting the infectious diseases, especially the diarrheal disorders of infancy, that, as Hess [1] has remarked, it has come to be looked on as heresy to deprecate its virtues in any regard. Nevertheless, there is a growing indication that there

1. Hess, A. F.: Scurvy Past and Present, Philadelphia, 1920, p. 41.

may be harmful effects of industrial methods on milk with respect to its antiscorbutic potency. Thus, Hess summarizes the consensus of opinion of the present day as increasing evidence that in the course of pasteurization milk loses an important measure of antiscorbutic vitamin. The term pasteurization, when employed in this connection, is not meant to be synonymous merely with the heating of milk to from 140 to 165 F., but embraces the entire commercial process—the heating, handling, subsequent cooling, aging and all other factors involved. There can be no doubt that milk which has undergone this elaborate treatment has suffered in its antiscorbutic property.[1]

It now appears that another aspect of the subject demands consideration. The variations in the nutritive quality of milk from different sources have been correlated in the past with the breed rather than the feed of cattle. Holsteins, Guernseys, Jerseys each produce a characteristic type of mammary secretion, the composition of which is determined by heredity far more than by the quality of the fodder furnished to the cows. Within the last few months, however, at least three independent series of investigations have shown a dependence of the antiscorbutic properties of the milk on the nature of the diet of the lactating animals.[2] If an animal is actually incapable of synthesizing vitamins as some investigators now believe, and it is dependent on the food for its supply of these factors, one would expect the milk to be greatly affected by the dietary intake. As a matter of fact, the latter varies greatly in the case of most American dairy cattle at different seasons of the year. The summer pasture is rich in green foods that furnish antiscorbutic substances; during periods of stall feeding, commercial concentrates and dried roughages and grains replace the "fresh" unaltered foods.

The outcome of the experiments of Dutcher and others in Minnesota are characteristic of all those reported. It appeared that the content of antiscorbutic vitamin is dependent on the vitamin content of the ration ingested by the cow. Twenty c.c. of summer milk were superior in nutritive value and in antiscorbutic potency to 60 c.c. of winter milk. It was found that there is a tendency for the milk to become deficient slowly, when the diet of the cow is low in vitamins, while the milk becomes of higher nutritive value almost immediately upon the ingestion of a vitamin-rich ration. In other words, there seems to be a tendency for milk to become poor slowly and rich rapidly as far as vitamins are concerned.

2. Hart, E. B.; Steenbock, H., and Ellis, N. R.: Influence of Diet on the Antiscorbutic Potency of Milk, J. Biol. Chem. 45: 383 (July) 1920. Dutcher, R. A.; Eckles, C. H.; Dahle, C. D.; Mead, S. W., and Schaefer, O. G.: Vitamine Studies, VI, The Influence of Diet of the Cow upon the Nutritive and Antiscorbutic Properties of Cow's Milk, ibid. 45: 119 (Dec.) 1920. Hess, A. F.; Unger, L. J., and Supplee, G. C.: Relation of Fodder to the Antiscorbutic Potency and Salt Content of Milk, ibid. 45: 229 (Dec.) 1920. Barnes, R. E., and Hume, E. M.: A Comparison Between the Antiscorbutic Properties of Fresh, Heated and Dried Cow's Milk, Lancet 2: 323 (Aug. 23) 1919; Relative Anti-Scorbutic Value of Fresh, Dried and Heated Cow's Milk, Biochem. J. 13: 306 (Nov.) 1919.

Current Comment

IOWA ADOPTS THE MODEL VITAL STATISTICS BILL

The Iowa legislature has at last adopted the model bill for the registration of births and deaths. This makes Iowa eligible for admission to the registration area of the federal census. West Virginia, Arizona, Nevada and South Dakota are now the only states which have not adopted this measure. The model bill is now before the West Virginia legislature and it is hoped that it will be adopted during the present session. It was introduced this winter in South Dakota, but was killed in the house committee. The Arizona legislature meets in November, and the model bill will probably be introduced at that time. The adoption of this bill by Iowa makes forty-four states which have now enacted uniform legislation on the registration of births and deaths, the largest number of states which has adopted any uniform bill.

THE MORTALITY RATES OF COLLEGE WOMEN

The study of mortality in special homogeneous groups is necessarily limited by the available material. The development of organization among college graduates in this country has entailed the keeping of careful class records which in the course of time will doubtless prove of great value in making many statistical studies of this group. Some material is now becoming available. A recent statistical study of mortality rates among the graduates of Vassar, Wellesley and Smith, numbering 15,561 through the class of 1914, has brought out some interesting and rather surprising facts.[1] It was perhaps to be expected that the death rates in this selected group should be materially lower than those for the whole population, but that the difference should be

DEATH RATES PER THOUSAND WOMEN DURING AGE PERIOD 45-54

U. S. registration area	12.58
New York City teachers	9.84
Ordinary insurance experience, Metropolitan Life Insurance Company	9.16
Vassar alumnae	8.54
Wellesley alumnae	5.41
Smith alumnae	3.54

so great is rather remarkable. The highly favorable mortality rate among these college women doubtless depends in part on their being a highly selected group, with sufficient vigor and good health to complete four years of college work. Environment may have played a part, as may also hygienic instruction and general training and adjustment of hours of work, rest and recreation. The proportion of graduates who have married was less than 50 per cent., so that exposure to the hazards of childbirth was notably lower in this group than in the population at large. It is a matter largely for conjecture how much importance should be attached to each of these several factors. The exceptional figures for Smith alumnae, as compared with those of the other two colleges, seem to need special explanation. The data appear to have been carefully

1. Hulst, Myra M.: Quart. Pub. Am. Statistical Assn. 17: 599, 1921.

verified. The writer of this summary concludes that "the results obtained indicate how much saving in mortality can be accomplished through extending to other women of the country the advantages which these colleges enjoy." This seems to overlook the unquestionably large influence to be attributed to initial vigor. Indeed, the difference between the Smith alumnae and those of the other groups indicates plainly enough that environment is by no means the only factor in producing such differences as those here recorded.

THE VETERAN SERVICE ADMINISTRATION

Both from a sentimental and from a practical point of view, no subject comes nearer to our people than the care of the disabled soldier. The problem has been a difficult one because of the vast number of men involved and probably also from the desire to do even more than was possible to alleviate the ills and disabilities affecting these men. However, not only in this country but also in practically all the European countries the plans originally adopted have met with far from unanimous approval. On the one hand, the government has been criticized for reckless extravagance and the soldiers for unwarranted demands; on the other hand, it has been claimed that the service was slow and inadequate and that men were suffering undue hardships. The medical profession from the first has been intimately interested in the matter. The examination of soldiers for discharge from the Army and Navy and the first report as to percentage and type of disability were the function of the medical departments. Following discharge, however, as will be seen from Chart V in the article by Rogers in this issue of THE JOURNAL (page 1082), the soldier passed out from a single control, the Army or Navy Department, to a status in which he has to look to three different government departments for action. Two of these, the Bureau of War Risk Insurance and the U. S. Public Health Service, were related —purely a paper relationship, however—since both are under the direction of the Secretary of the Treasury. The third, the Federal Board of Vocational Education, is responsible only to Congress. It has no relation to or coordination with the two other services directly charged with the care of the veteran. Recognizing the manifest faults of the present system, and the almost universal criticisms directed against it, the President appointed a committee to make an investigation and report. The committee's report, published in the newspapers, has received the endorsement of the President in his message to Congress. In the chart appearing under the article describing the new plan (page 1112), one can see that provision has been made for greater coordination and direct responsibility. The American Medical Association, through its special committee,[1] has acted jointly with the other bodies engaged in formulating the new plan. Under this plan a single department will be responsible for the care of our veterans — a Veteran Service Administration. The various divisions heretofore engaged, as well as every other possible source of assistance in economic and physical reconstruction of the disabled, will be called on to aid in the work. The American Medical Association, and all other medical organizations, as may be seen from the plan, have a functioning place in the service.

1. Committee to Act on Rehabilitation of Ex-Service Men, Association News, THE JOURNAL 76: 798 (March 19) 1921.

HOSPITALS AND PHYSICIANS FOR RURAL COMMUNITIES

In a recent editorial comment[1] it was shown that whatever shortage of physicians may exist in rural communities is due to the general trend of population, including physicians, to the cities and not to a dearth of physicians generally. The physician prefers to live in the city, not only because of the better living conditions for himself and family, but also, and mainly, because of the lack of hospital facilities in rural communities. As shown last week,[2] the extensive advances in medical education in recent years make it necessary that the physician have access to a hospital with its well equipped laboratories, where he can give his patients the benefit of the later and better methods of diagnosis and treatment. The public, it must be kept in mind, also is coming more and more to appreciate the value of hospitals with their accessories; people living in rural communities who need medical care are now voluntarily going where there are hospital facilities, or are being sent by the family physician. In considering the whole subject, it is well to know what are the conditions as regards hospital facilities in various parts of the country. The statistics we publish this week show that over one-half the counties in the United States are without hospitals, and a careful survey of these counties will show that it is in them that the shortage of physicians is found. The recent graduate in medicine who has from observation and practice learned the value of a hospital and its laboratory is not attracted to communities where these advantages are lacking. When hospitals with laboratories, or health centers with hospitals and laboratories, are established in these rural communities, there will no longer be the cry that such communities lack trained physicians.

1. Shortage of Physicians in Rural Communities, Current Comment, THE JOURNAL 76: 796 (March 19) 1921.
2. Qualifications to Treat the Sick, Current Comment, THE JOURNAL 76: 1011 (April 9) 1921.

Private Practice Forbidden in Russia.—The *Medizinische Klinik* quotes from a letter in the Vienna *Allgemeine Zeitung*, written by an Austrian physician who has recently returned from Russia. He says that the final step in the transformation of medical practice into a state function has been taken recently by the soviet government. This prohibits private practice by physicians. This was the last private business still permitted as arrangements had to be made for free dispensaries at available points. The physicians living near the dispensaries are given charge of them, at a fixed salary. The sanatoriums and private hospitals had been taken early for the purpose, retaining their former proprietors as directors. The writer adds, "The middle classes whose fate in all socialistic movements is to be ground between the millstones of capital and labor, have simply been ground out of existence, or crushed down into the proletariat. The forbidding of private practice now consequently has scarcely any significance for the physicians of Russia."

Association News

THE BOSTON SESSION

Hotel Reservations at Boston

The Local Committee on Hotels, Dr. John T. Bottomley, Chairman, Boston Medical Library, 8 The Fenway, Boston 17, Massachusetts, offers to assist members in securing hotel reservations. In addressing the Committee, be sure to state the number in your party, including yourself, how many rooms are desired and whether with or without bath, also the total daily charge you are ready to pay. If, after having secured a reservation, it is impossible to attend the session, the Hotel Committee should be advised promptly in order that surrendered reservations may be reassigned.

Special Railroad Fares

Fellows of the Association who desire to avail themselves of the special railroad fares which are available in territories served by the Trunk Line Association, the Central Passenger Association and the Western Passenger Association, if they have not already done so, should make application for Identification Certificates by writing to the Secretary of the Association, Dr. Alexander R. Craig, 535 North Dearborn Street, Chicago, and enclosing a self-addressed, stamped envelope. Requests for these Identification Certificates should be forwarded at once. These requests will be filed and as soon as the certificates are available, they will be given attention.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

State Medical Society Meeting.—The annual meeting of the state medical society will be held at Montgomery, April 19-21.

Dr. Williams Addresses Mental Hygiene Society.—At a recent meeting of the Alabama Society for Mental Hygiene, held under the presidency of Dr. William D. Partlow, Tuscaloosa, at Montgomery, Dr. Frankwood E. Williams, New York, associate medical director of the National Committee for Mental Hygiene gave an address on the mental hygiene of the child.

CALIFORNIA

Physician Fined.—Dr. Galen R. Hickok, who, it is reported, was convicted of malpractice, but is now free on appeal bond, was recently fined $50 for contempt of court.

Physician Wins in Damage Suit.—Damages in any amount were denied in the suit against Dr. William P. Byron, Lemoore, for $50,000 for alleged malpractice resulting in the death of a girl, aged 11 years, last July.

Charges Against Physician Dismissed.—Charges against Dr. Lucian A. Bauter, Pittsburg, that he performed a criminal operation resulting in the death of Miss Mildred Stau have been dismissed because of lack of evidence.

Naturopath Loses License.—It is reported that Gertrude Steele, naturopath of Vience, recently had her license revoked by the board of medical examiners on the ground that she had performed a minor operation in attempting to remove freckles from the face of her son-in-law, who died in the process of being beautified.

Fail to Recognize Smallpox.—It is reported that the health officer of Santa Ana recently warned the people of that city and of West Santa Ana of a serious smallpox menace, stating that the spread of the disease was in a large measure due to the failure of certain chiropractors to recognize the disease.

Southern California Medical Society.—At the semiannual meeting of the Southern California Medical Society, held April 1-2, at Santa Ana, Dr. Boris Sidis, Boston, presented a paper on "Psychopathology and Psycho-Analysis," and Dr. Walter T. Harrison, U. S. P. H. S., spoke on "The Status of the Present Plague Infection in California."

Personal.—Dr. George H. Whipple, dean of the University Medical School, Berkeley, has resigned to become dean of the new medical school at Rochester, N. Y., which was recently endowed with $40,000,000 by the president of the Eastman Kodak Company of that place.——Dr. William E. Musgrave, has resigned as director of the University of California Medical School to accept the secretaryship of the state medical society and will edit the *California State Journal of Medicine*. Dr. Musgrave will continue his directorship of the Children's Hospital.

Hospital News.—An invitation was extended to the general public of Madera, Merced and Stanislaus counties to visit the Tri-County Tubercular Sanatorium at Ahwahnee, on April 10.——A new building for the Hebrew Hospital and Home for Aged and Disabled will be erected at San Francisco.——At a recent hearing before the senate committee on the proposed reductions in appropriations it was claimed that the state hospitals are in a deplorable condition owing to insufficient room and lack of necessary sanitary equipment.——The contract for constructing the annex to the Mission Valley Hospital has been awarded. The federal government donated $5,000 to pay for the annex.

Osler Memorial Association.—At a recent meeting of some of Sir William Osler's students, an Osler Memorial Association was formed for the purpose of founding an Osler memorial lectureship which will provide for an annual lecture on a scientific subject. The expense will be met by a yearly assessment of the members of the association. Dr. George H. Whipple, president of the California Academy of Medicine, has advised that the academy will be glad to cooperate in securing lecturers and in sharing the expense. Dr. John M. T. Finney, Baltimore, has accepted an invitation to deliver the first lecture some time in April. The Osler Memorial Association has offered the lectureship to the Los Angeles County Medical Association and the gift has been accepted.

ILLINOIS

Galesburg Medical Society.—At the regular monthly meeting of the Galesburg Medical Society, Dr. Albert H. Byfield, professor of pediatrics at the University of Iowa, read a paper on the subject "Periodic Vomiting and Allied Affections in Childhood."

Tuberculosis Clinic.—Under the auspices of the Henry County Sanatorium and the Henry County Tuberculosis Association a free clinic was held, April 5, at Kewanee. Dr. Orville W. McMichael, Chicago, was the clinician. Another clinic will be held in May.

Health Promotion Week.—That the state may take concerted action "looking to the betterment of local conditions of sanitation, instruction of the people in the practice of hygiene, determination of the causes of communicable diseases, and the prevention, so far as possible, of such diseases," Governor Small has proclaimed the week of April 17-23 as health promotion week and designated the state department of public health to outline a suitable program. More than 336,000 cases of communicable diseases and over 120,000 deaths from all causes in the state were reported to the state department of public health during the year 1920.

Chicago

Course for Nutrition Workers.—The Home Economics Department of the University of Chicago offers during the summer two six weeks' courses for the training of nutrition workers with children. Asst. Prof. Lydia J. Roberts will be in charge of the course and Dr. Walter H. O. Hoffmann, instructor in medicine (pediatrics), Rush Medical College, will act as medical examiner. The first session's work will begin on June 21 and the second on July 28.

INDIANA

Fined for Illegal Practice.—It is reported that Norman Fitz of Muncie has been fined $25 and costs for practicing medicine without a license.

State Hospital Association.—For the purpose of federating the eighty hospitals in the state in an organization for mutual improvement and for greater effectiveness in the care of the sick and injured, representatives of these institutions have been asked to assemble at Lafayette, April 27-28, and organize the Indiana State Hospital Association, which will be an auxiliary of the American Hospital Association.

Hospital News.—The county hospital board has purchased a site in Clinton on which to build a county hospital.——A decision to raise about $375,000 by popular subscription to be used with the $125,000 appropriated by the state for erection of the first wing of the proposed Riley Memorial Hospital for Children was reached at a meeting of a joint committee representing Indiana University and the Riley Memorial Association. The hospital is to be in convenient proximity to the Robert W. Long Hospital and the Indiana University School of Medicine, on a site now owned by the state in Indianapolis. The institution will be "for the treatment of children afflicted with disease, defect or physical deformity," and is to have accommodations for at least 200 patients.

IOWA

Radium Institute.—A group of physicians and surgeons of Davenport, Rock Island and Moline have completed an organization to be known as the Radium Institute of Davenport. It was decided to incorporate for $25,000 and to limit the stockholders to physicians in good standing from the tri-cities.

LOUISIANA

Louisiana State Medical Society.—The annual meeting of the society will be held at New Orleans, April 19-21.

Physician Nominated for Mayor.—Friends of Dr. Charles F. Gelbke celebrated his nomination for the third term for mayor of Gretna with a parade barbecue.

Medical Association Reorganizes.—A reorganization of the Tangipahoa Parish Medical Association was effected at a meeting held, April 1, at Hammond. Dr. William T. Newman, Independence, was elected president, and Dr. Edward J. Kevlin, Ponchatoula, secretary-treasurer.

Special Postgraduate Work.—During one week previous to the state medical society meeting (April 11-18) and the week following the meeting (April 25-May 1) the postgraduate committee of the society has arranged for a course to be conducted by the Graduate School of Medicine, Tulane University, and the Loyola Post-Graduate School of Medicine, New Orleans. Members of the state society will be entitled to the privilege of the course on presenting the 1921 membership card.

Health Notes.—Pins representing the several hundred local dairies inserted in a large map hung in the food department of the New Orleans Board of Health indicate by their color the status of the dairies on the health board's crusade against impure milk.——The next move of the health board will be to enforce the city ordinance governing the manufacture of ice cream. Later, an investigation of the manufacture and sale of candy will be made. It is said that quantities of candy are made in bed rooms and other private places and peddled throughout the city, being sold unwrapped from baskets and open wagons in the streets.

MAINE

Bowdoin Medical School Will Close.—After having held 100 annual sessions, Bowdoin Medical School will close its doors in June. It was announced early in the fall that Bowdoin College could no longer maintain the medical department, and a bill was introduced in the state legislature providing that it be converted into a state institution to be supported by state appropriations. This bill passed both the house and the senate but was vetoed by Governor Baxter and the veto was sustained.

Plan State Baby Week.—Among the summer plans of the Division of Public Health Nursing and Child Hygiene is that of a state-wide baby week which will probably be held the last of June or early in July. The Division of Public Health Nursing and Child Hygiene is now nearing the close of its first year, having been formed last summer through the cooperation of the Maine Public Health Association and the Red Cross in Maine, which organization now pays the salary of the director, while the state department of health bears the expenses attendant upon the work of the division. This division will shortly be supported entirely by the state, its value having been demonstrated in the past months since its inauguration, and both salaries and expenses will be met from the health appropriation.

MARYLAND

Personal.—Dr. Susanne R. Parsons of the Hospital of the Woman's Medical College, Philadelphia, has been appointed director of the welfare center of the health department's bureau of child welfare.

Meetings.—At the regular meeting of the Baltimore City Medical Society, held under the presidency of Dr. Harvey G. Beck, April 8, at Osler Hall, Dr. Max Kahn spoke on "Roentgen-Ray Diagnosis in Intestinal Obstruction with Case Reports" and the discussion which followed was opened by Dr. Joseph C. Bloodgood and Dr. Alexius W. McGlannan. Dr. Edgar B. Friedenwald exhibited one of the most unusual cases of tumor of the spine ever brought to the attention of local medical circles, the patient being a boy of 11 years of age.

New City Hospital Group Proposed.—A plan to make the new municipal hospital for contagious diseases a unit in a general scheme of city hospitals at Bay View, but entirely dissociated from the almshouse, is now under consideration by the mayor. The site at Bay View and Sydenham, a part of this group, has been visited by the mayor, the city comptroller and the architect of the proposed building and the existing hospital buildings carefully inspected. An argument in favor of Sydenham is that it will enable the city to concentrate its hospital activities at Bay View, where there is already a hospital for consumptives and a general hospital. The Baltimore city officials are planning to separate these hospitals from the almshouse section of Bay View, and thereby do away with one of the objections Health Commissioner Jones and the hospital commission have to Sydenham as a site for the new building. The fact that it is in a growing industrial section was a serious reason for eliminating it as a site for the proposed hospital, but indications are that the hospital commission and Dr. C. Hampson Jones will be overruled, so far as this objection is concerned.

MASSACHUSETTS

Personal.—The governor has recommended to the executive council Dr. Richard P. Strong, who holds the chair of tropical medicine at the Harvard Medical School, as a member of the Public Health Council, Boston.

New Bureau for Health Department.—A free health information bureau, from which citizens may obtain by mail a diagnosis of their ailments and advice regarding self-treatment or be directed to clinics or specialists, has been established by the municipal health department.

Series of Public Lectures to Be Given at Harvard.—Beginning March 31, a series of three public lectures on topics of current interest in physics will be given by Prof. William Duane, head of department of biophysics, Harvard Medical School. The subject for March 31, was "Radio-Activity and Roentgen-Rays."

Harvard Offers New Degree.—In his annual report Dr. David L. Edsall, dean of the Harvard University Medical School, announces the establishment of a degree of doctor of medical science (M.S.D.) to designate men who have specialized in research work and the laboratory development of medicine rather than the clinical branches.

MINNESOTA

Personal.—Dr. Harry B. Zimmerman, St. Paul, has been appointed chief surgeon for the Great Northern Railway. The surgical cases will be cared for at the new Miller Hospital, St. Paul.

Typhoid Epidemic at State University.—An epidemic of typhoid fever among the students at the state university has been reported to the Minneapolis Health Department. It was discovered that nearly all students affected had been eating at the Minnesota Union Cafeteria and the disease is believed to have originated with a typhoid carrier employed by the cafeteria. The situation has been presented to the house committee on dairy and food legislation, which is now engaged in recodification of all dairy and food laws, and needed legislation to prevent such epidemics in the future will be included as an amendment to these bills when they are presented to the legislature.

MISSISSIPPI

Morbidity Reports.—Dr. Roland W. Hall, director of bureau of vital statistics, has just completed a tabulation of the reports of births for 1920 and the record shows that the birth rate for Mississippi during 1920 was approximately twenty-five per thousand. It is of interest to note that about 95 per cent. of the physicians of the state made morbidity reports to the bureau of vital statistics through the county health officers for the month of February.

County Health Units.—The state board of health is devoting a great deal of attention to intensive county health work

with special reference to rural sanitation. The counties of Calhoun and Union have each recently made $5,000 appropriations for this work. The state board of health in cooperation with the International Health Board will donate an equal amount for each county, making a budget of $10,000 per county for the health unit. Each health unit is in charge of an experienced and trained health official. The program of each county unit is projected on a broad basis with special emphasis on the control of the soil pollution diseases and child welfare, including the medical inspection of schoolchildren.

Bureau of Child Welfare.—This bureau of the state board of health is being organized in such a way as to include in its program the following activities: (1) Weighing and measuring all schoolchildren; (2) physical examination of schoolchildren; (3) follow-up work by public health nurse to obtain corretions of defects; (4) nutrition clinics; (5) health center in each county with, *a*, baby and pre-school clinics, *b*, prenatal clinics, *c*, classes for young mothers, *d*, clinics as needed locally; (6) county health organization; (7) prenatal letters; (8) birth registration—baby book; (9) newspaper service, educational. Child welfare units have been organized in as many as five counties. Each unit is in charge of a physician with a public health nurse as an assistant. A systematic inspection will be made of all the children in a county in which such units operate.

MISSOURI

Personal.—Dr. Varney Hazlewood has resigned as superintendent of the Jasper County Tuberculosis Hospital, Webb City, to become superintendent of the government hospital at Alexandria, La. Dr. Minard J. Armstrong, former superintendent of the state tuberculosis hospital, Mount Vernon, will succeed Dr. Hazlewood at Webb City.

Medical and Hospital Standards.—Believing that the standards of the medical profession will be lowered and the efficiency of the hospitals of the state impaired if the two medical bills passed by the legislature and awaiting the governor's signature become state laws, the St. Louis Medical Society has appealed to the governor for a delay and a hearing. The first bill provides that instead of the existing regulation that no person may be licensed to practice medicine in the state who is not a graduate of "a reputable medical school" the statutes should read "a medical school"—striking out the word "reputable." The second measure, in effect, compels hospitals exempt from taxation to admit all licensed practitioners of any school for the treatment of patients. The bills are defended by the College of Physicians and Surgeons of St. Louis and an organization styling itself the International Independent Medical Association.

NEVADA

To Use Gas for Capital Punishment.—The governor has signed the act providing for the use of lethal gas in executing the death penalty. The execution which will take place in a suitably constructed cell must be witnessed by a competent physician in addition to the warden and six other adults. Nevada is the first state to provide for the use of gas in executing criminals. It is planned to use the gas when the condemned man is asleep.

NEW YORK

Alcoholic Patients Fewer.—A report recently submitted by the superintendent of the Middletown State Hospital, Dr. Maurice C. Ashley, states that several years ago 8 per cent. of the patients were alcoholic, while at present not even 1 per cent. can be placed in that classification. His figures do not indicate that the number of narcotic drug cases are increasing.

Centenary of Bloomingdale Hospital.—The hundredth anniversary of the opening of this hospital will be celebrated on May 26. The exercises will include addresses by Dr. Pierre Janet, Paris, Dr. Richard G. Rows, London, and by Drs. Lewellys F. Barker and Adolf Meyer, Baltimore. The hospital is the department of nervous and mental diseases of the New York Hospital which, since it was opened in 1792 has made provision for the treatment of persons suffering from mental disorders.

Governor Invites Hospital Commissioners to Resign.—Because Dr. Charles W. Pilgrim, New York, and Dr. Frederick M. Higgins, Brooklyn, of the New York State Hospital Commission, have protested against the proposals to cut appropriations to state hospitals which would necessitate a reduction in the standards of medical care and nursing, Governor Miller has lodged formal charges of inefficiency and unwillingness to cooperate with the state administration against them and has asked for their resignation. The New York Psychiatrical Society at its meeting, April 5, passed resolutions which were immediately telegraphed to Governor Miller making an earnest protest against the removal of Dr. Pilgrim and Dr. Higgins from the hospital commission. The society also urged the commissioners not to resign until a full investigation can be made.

New York City

Two New Cases of Typhus Fever Reported.—Two new cases of typhus have been reported in Brooklyn, both occurring in natives of Russia who have lived in this country for some years. The health department is endeavoring to trace the source of the infection.

Harvey Lecture.—Sir Walter M. Fletcher, London, secretary of the medical research committee of Great Britain, will deliver the tenth of the current series of Harvey Society lectures at the New York Academy of Medicine, April 16, on the subject of "The State's Relation to Medical Activities in Great Britain."

Physician Tests Prohibition Law.—The first case in which a physician has attempted to test the constitutionality of prohibition enforcement, under the Volstead Act, along purely medical lines, has been made by Dr. Donald McCaskey, Fellow of the New York Academy of Medicine and a practitioner of the city, who has been cited to show cause, April 7, why his permit, as a physician, to prescribe liquors should not be revoked and canceled.

Personal.—Dr. Luther Emmett Holt has resigned as Carpentier professor of diseases of children at the College of Physicians and Surgeons, Columbia University, to accept the clinical professorship of diseases of children. Dr. Holt will continue to give clinics at the Babies' Hospital as in former years.——Dr. Antonio Fanoni has been promoted by the King of Italy from the rank of chevalier to officer in the Order of the Crown of Italy in recognition of his services during and subsequent to the war.

Damages for Appendicitis.—A jury in the Supreme Court of Brooklyn returned a verdict of $6,500, April 8, against the New York Consolidated Railroad Company in favor of the estate of Herbert W. Goward, injured in the Malbone Street tunnel wreck in November, 1918. The counsel for the Goward estate produced medical proof showing that appendicitis was a germ disease; that germs exist in the bodies of all ordinarily healthy persons; that the illness that Goward had suffered as a result of his injuries had caused a clogging of the intestinal tract; that the circulation of the blood through the appendix was retarded, and that a breeding place for germs was created.

OHIO

Two Medical Classes Dropped.—The state university has announced that freshmen and sophomore classes in the college of medicine have been discontinued indefinitely.

Dr. Johnson Found Guilty.—It is reported that Dr. Philip M. Johnson (negro), Toledo, has been found guilty of charges of conspiracy involving the violation of the federal narcotic law.

Christian Science Bill Lost.—The house has defeated, by a vote of 30 to 67, the Morris bill that would have legalized the practice of Christian science healing and removed the practitioners from under the control of the state medical board.

Typhoid Epidemic Charged to Contaminated Water Supply.—Following the recent typhoid epidemic, a suit for damages aggregating $53,225 has been filed against the city of Salem as a test case to determine the liability of the city for furnishing contaminated water which was the cause of the epidemic.

U. S. Public Health Station for Toledo.—It is announced that Toledo will be one of eleven cities in the state to have a U. S. Public Health Service Station. This will enable 5,000 sick or disabled former service men of northwestern Ohio to have immediate access to medical service and advice.

Dr. Charles E. Fisher has been appointed executive head of the station at Toledo.

Physicians Exonerated.—It is reported that Dr. Joseph G. Eckstein, having proved that he had no hand in the alleged operation which subsequently caused the death of Mrs. Maude Morris, of which he was accused, was exonerated by Municipal Judge Yeatman, Cincinnati.——Dr. Mary H. I. Earle, Cincinnati, was acquitted on the charge of having performed an operation which it was alleged resulted in the death of Mrs. Carrie Conradi Cheviot, in January.

PENNSYLVANIA

Fund for Mastbaum Sanitarium Ward Raised.—At exercises in the Eagleville Sanatorium and Hospital, in memory of Stanley V. Mastbaum, it was announced that a $25,000 fund has been raised to establish an observation ward in the institution. This ward will care for children and adults whose condition is uncertain. Their cases will be observed to determine whether or not they are suffering from tuberculosis and where the tendency toward such a disease exists, but has not been developed, patients will be treated with a view to preventing this malady. The new ward will be named in memory of Mr. Mastbaum who was a pioneer in the moving picture industry and a leader in Philadelphia's general business world. He was one of the benefactors of the large hospital at Eagleville, near Norristown.

Philadelphia

Personal.—Dr. John Norman Henry has been elected president of the General Alumni Society of the University of Pennsylvania.

SOUTH CAROLINA

Fined for Practicing Without a License.—It is reported that Dr. W. D. Barnes, Chester, was indicted by a committee from the Chester County Medical Association, and convicted of practicing medicine without a state license and fined $100.

TEXAS

Governor Signs Tuberculosis Home Bill.—A bill appropriating $1,500,000 for a sanatorium at Kerrville, to be used for Texas soldiers of the World War afflicted with tuberculosis, has been signed by the governor. The measure provides for the taking over, by the state, of the work already started at Kerrville for ex-service men and the assuming of all liens and benefits heretofore given for the hospital.

WASHINGTON

Medical Lake Clinic Closed.—The governor having vetoed the appropriation for maintenance, the woman's industrial home and clinic at Medical Lake was closed, March 31. It is now necessary to send all diseased and delinquent women to the penitentiary or keep them in the city and county jails as was the custom before the home was established.

CANADA

Personal.—Dr. Alexander Primrose, C. B., has returned to Toronto from a visit to Hot Springs, Va.——Dr. Allen MacK. Baines will return to Toronto from the West Indies in April very much improved in health.——Dr. Henry Glendinning, Toronto, and Dr. Albert J. Fraleigh have been on a trip to Bermuda.

To Report on Health Affairs.—The Ontario Medical Association and the College of Physicians and Surgeons of Ontario have formed a combined committee on public health. To represent the college—Drs. Edmund E. King, Toronto; George M. Brodie, Woodstock; John Fenton Argue, Ottawa. From the Ontario Medical Association—Drs. George S. Cameron, Peterboro; George S. Burt, Owen Sound; Thomas C. Routley, Toronto. Dr. King is to be chairman and Dr. Routley, secretary.

University of Toronto.—Much disappointment is being expressed in university circles in Toronto at the failure of the Ontario government to take action during the present session of the legislature on the report of their own appointed special commission which has been inquiring into the status of the universities of the province. As the University of Toronto expected $1,000,000 from the Rockefeller Foundation there will be for the present no available funds for further expansion as it will be doubtful if even this sum will be forthcoming owing to the failure of the government to come to the assistance of the university.

GENERAL

American Home Economics Association.—The fourteenth annual meeting of the American Home Economics Association will be held at the New Ocean House, Swampscott, Mass., June 27-30.

Doctor Robbed of Diploma.—It is reported that a thief recently entered the office of Dr. Ernest F. Cox, Columbus, Ohio, and took the doctor's diploma, leaving everything else in the office as he found it.

American Association of Anesthetists.—The association will meet at the Hotel Bellevue, Boston, June 6-7. An extended program of pertinent papers on the science and practice of anesthesia will be presented as well as symposium on anesthesia in obstetrics.

Diploma and Licenses Stolen.—Dr. Charles Samuel Jonathan Tillmanns of Calexico, Calif., reports that a diploma issued to him by Washington University Medical School, St. Louis, May 23, 1907, a license issued, June 29, 1917, by the Illinois State Board of Health, and a reciprocal license, No. C-1440, issued by the California Board of Medical Examiners, Dec. 5, 1919, have disappeared. State board secretaries are asked to be on the lookout for these credentials.

Draft Regulations on Beer.—The prohibition enforcement unit of the Treasury Department is drawing up regulations governing the use of beer for medicinal purposes under the ruling of former Attorney-General Palmer that physicians have the right under the law to prescribe beer or wine for their patients. There is no change from the present regulations governing the giving of prescriptions for spirituous liquids. Licenses must be obtained. A limit is fixed on the amount of beer or wine to be prescribed, the amount being four and seven-eighths gallon of beer a month, which averages about two bottles a day. The limit proposed in the regulations for wine is fixed at 3 gallons a month. The regulations are not yet final and have not been officially approved.

Report on Cancer Research.—The report of the cancer commission of Harvard University and the Collis P. Huntington Memorial Hospital for Cancer Research covering the year 1919-1920 states that the new roentgen-ray apparatus upon which Prof. William Duane has been working for several years is now complete and is to be installed in the hospital. Interesting developments have been made in the application of radium therapy in combination with and as supplementary to surgical operation in the treatment of advanced cases of cancer where operation offers little prospect of success. Dr. John C. Warren, Boston, in closing his report remarks that it is not likely that a single cause or a single cure will ever be discovered for such a variety of diseases as cancer presents in its different manifestations, but the constantly increasing mass of knowledge which is accumulated by patient investigation in many different lines of science and the coordination of these facts by trained investigators carry us ever forward and nearer to the desired goal.

Luncheon to General Sawyer.—Offers of cooperation in improving public health conditions were extended to Gen. Charles S. Sawyer by the National Health Council composed of ten national health organizations at a luncheon given in his honor by the National Health Council at the Hotel Powhatan, Washington, D. C., April 9. The resources and equipment of these organizations were pledged to Dr. Sawyer in carrying out his work. Among those at the luncheon were Dr. William F. Snow, American Social Hygiene Association; Dr. Charles J. Hatfield, National Tuberculosis Association; Dr. Haven Emerson, medical director, Bureau of War Risk Insurance; Mr. W. Frank Persons and Dr. Irwin A. Peterson, American Red Cross; Dr. Frederick R. Green, Council on Health and Public Instruction, American Medical Association; Miss Mary Gardiner, National Organization for Public Health Nursing; Dr. Watson S. Rankin, Conference of State and Provincial Health Authorities; Dr. Frankwood E. Williams, National Committee for Mental Hygiene; Courtney Dinwiddie, National Child Health Council, and Dr. Donald B. Armstrong, National Health Council. General Sawyer expressed his appreciation of the support extended to him and declared it was the most effective backing he had received since the President appointed him to take charge of the public health work of the administration.

LATIN AMERICA

Spain Offers Fellowships to Latin Americans.—The Spanish government has created twenty-five fellowships in Spanish universities which will be offered to Latin American students.

Army Sanatorium in Brazil.—Plans are being made for the construction in Brazil of an army sanatorium, the need of which is much felt. This sanatorium will be built on the extensive reservation of the Naval Sanatorium of Friburgo.

Ecuador Physicians Will Attend Urology Congress.—On the invitation of the faculty of medicine of Paris, the secretary of education of Ecuador has appointed two physicians to represent the medical school of Quito at the International Congress of Urology which will be held in Paris in June.

Practice of Medicine in Spain by Foreigners.—Spanish physicians have been much exercised of late over foreign physicians practicing in Spain. At a recent session of the Royal Academy of Medicine, Dr. Florestán Aguilar, the secretary of the Spanish Medical Association, mentioned several cases in which foreigners lacking proper diplomas were authorized to practice. He quoted the case of a Polish "odontologist" whose diploma being in Russian and the Spanish translator transcribing literally, "Physician for Teeth," a license as doctor of medicine was granted the applicant. Dr. Aguilar emphasized that the recent decree of reciprocity with foreign countries may prove harmful as in England the exercise of medicine was free to all comers, and therefore, any number of English physicians might go to Spain to practice.

FOREIGN

Medical Members in Prussian Legislature.—The last Landtag had five medical members, all democrats and social democrats; Abderhalden had been elected but he soon resigned his post. The recent elections have resulted in the reelection of one of the social democrat physicians, Dr. Weyl, and he is now the only medical man in the house. His past career shows, the *Deutsche medizinische Wochenschrift* remarks, that he cannot be regarded as representing the profession in Prussia.

Increased Medical School Budget at Brussels.—A budget of 100,000,000 francs—about $7,390,000—has been fixed for new buildings and endowments for the medical school of the University of Brussels, Belgium. Of this sum 57 per cent. will be raised by the city of Brussels and the university, the remaining 43 per cent.—$3,177,700—by the Rockefeller Foundation. This is said to be the largest endowment for medical education that Europe has ever known. All the old medical buildings are to be razed, the campus is to be enlarged by the acquiring of adjacent property and a new group of buildings will be erected.

Creation of a Ministry of Health for Australia.—The creation of a separate ministry of health and a federal department of health was decided upon by the cabinet of the Australian government on February 3. Heretofore the federal health activities have been limited largely to maritime quarantine and the manufacture of serums and vaccines. In the plans for the department of health emphasis will be placed at the beginning on (*a*) the establishment of a division of industrial hygiene giving special attention to mining and later extending its activities to other industries, (*b*) the establishment of a system of diagnostic laboratories in Australia and its dependencies, (*c*) taking over the Australian Institute of Tropical Medicine and making it the central research and diagnostic laboratory for tropical Australia, the territory of Papua, and late German New Guinea, (*d*) taking over the territorial health services, including those of Papua and the newly acquired late German New Guinea, and (*e*) enlarging the scope of the hookworm campaign, now being carried on jointly by the commonwealth of Australia, the International Health Board of the Rockefeller Foundation, and the States, to include other diseases than hookworm disease and also problems of rural sanitation.

Deaths in Other Countries

Dr. **Ernesto Odriosola**, professor of clinical medicine and dean of the Faculty of Medicine of Lima, Peru, one of the leading internists and medical authorities of South America, and author of numerous works on cardiovascular disease, hyperthyroidism, etc.——From Montevideo is reported the death of Dr. **J. Rosende**, director of the clinic for skin diseases, and of Dr. **Escolástico Imas**, a prominent stateman and member of the legislature who retired from practice a number of years ago, aged 65.——Dr. **F. Escudé**, director of the research laboratory of the Madrid Faculty of Medicine and of a leading hospital.——Dr. **E. Klose**, privatdozent for pediatrics at the University of Greifswald, aged 39.——Dr. **E. Mayr**, president of the Augsburg medical chamber.

Government Services

REORGANIZATION OF THE WORK OF REHABILITATION OF COMPENSABLE DISABLED EX-SERVICE MEN AND WOMEN OF THE WORLD WAR

The work of the special committee appointed by the Board of Trustees of the American Medical Association, the consultants on hospitalization appointed by the Secretary of the Treasury, and the special committee appointed by the President, of which General Dawes is chairman, resulted in the adoption of a report in which was recommended a thorough reorganization of federal agencies created by the Congress to distribute the benefits provided by the government for compensable disabled veterans.

The investigation by the committees mentioned shows that the confusion and delay have been due to the division of responsibility among the three main governmental agencies designated by law to carry on this work. In consequence there has been an utter lack of central control over these three agencies and the other cooperative governmental departments and bureaus which have been utilized in carrying out the purpose of the related congressional legislation.

While decentralization has been practiced by two of the services concerned, the third agency, the Bureau of War Risk Insurance, has been unable, under the law, to make a corresponding decentralization and this has caused confusion and failure of effective results. Thus it has not been an unwillingness or reluctance to serve and cooperate, but divergent provision of laws and limitations placed by legal decisions which have prevented effective coordination in these three services. Furthermore, limitations in the interest of presumed economy have been placed on the authority of those responsible for these government agencies in the employment of personnel, both as to number and quality. This has operated to the serious embarrassment of the various agencies engaged in obtaining and retaining the quality of personnel on which the efficiency of the departments depends.

The past and present lack of facilities for the needed hospitalization is due in part to the failure of Congress to make the appropriation requested for this purpose by the Secretary of the Treasury.

It was a mistake to designate the U. S. Public Health Service alone as the responsible agent of the government to provide medical and surgical care and in addition to provide the medical personnel for examination for disability rating, for fitness for vocational training and for inspection. This task presented insuperable difficulties which were and still are so great as to exceed the facilities which are possessed by the U. S. Public Health Service or in fact by all federal medical organizations. After investigation it must be the unbiased opinion of any fair minded person that the U. S. Public Health Service has accomplished as much as could be reasonably expected under the existing conditions.

In the formulation of a constructive program based on fundamental principles which will provide prompt and effective action and service to compensable veterans, as has been stated above, the committee has recommended a reorganization of all of the responsible agencies of the government designated by law to distribute the benefits accorded by the government to its compensable veterans.

The recommended reorganization creates a Veteran Service Administration under the control of a director general who will be appointed by and be directly responsible to the President of the United States. In this organization—the Veteran Service Administration—there are included the Bureau of War Risk Insurance and the Division of Reha-

bilitation of the Federal Board for Vocational Education with all the present powers granted them by the Congress. The director general is made the sole responsible agent in the administration and operation in the allotment of all of the benefits provided by the government for its disabled veterans.

Provision is made for decentralization for administration and operation of the work into fourteen or more districts of the continental United States.

The chart of the proposed organization for the Veteran Service Administration indicates that the director general will have authority to use all available hospital beds controlled by the Public Health Service, the Medical Department of the Army, the Bureau of Assurance of this has been made to the President's committee by the representatives to these organizations.

The district supervisor will be appointed by the director general and will be directly responsible to him for the operation of the Veteran Service in his district, in providing medical service, compensation, vocational training and education and inspection. The district supervisor will hospitalize compensable veterans in his district by sending them to available beds in governmental hospitals and in state, county, municipal and private institutions for which he shall have made contractural provision. By far the largest part of the Veteran Service Administration is a medical problem. The civilian med-

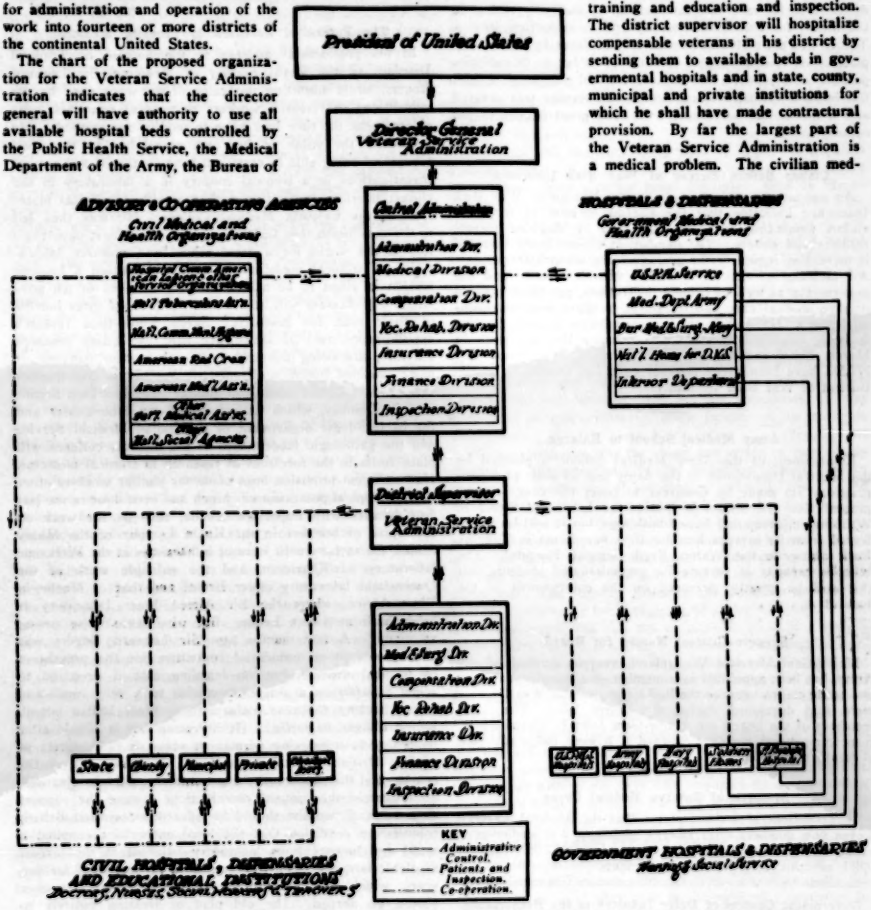

CHART OF PROPOSED ORGANIZATION FOR SOLDIER REHABILITATION PREPARED BY PRESIDENTIAL COMMITTEE

Medicine of the Navy, the National Home for Disabled Volunteer Soldiers, St. Elizabeth's Hospital, Washington, D. C., controlled by the Interior Department, and the civil hospitals and dispensaries—state, county, municipal and private. He is authorized under the law to create a medical division of administration and operation in the examination necessary for disability rating, for fitness for vocational training and to ascertain the need of hospitalization.

He will have the sympathetic and efficient cooperation of the civil medical and health organizations of the country. ical profession will be necessarily invited to take part in this work. We may confidently expect that the whole civil medical profession will respond and help in the efficient solution of this problem. While the pay for such medical and surgical services is not adequate, it affords clinical experience of value and an opportunity to relieve the present condition as to the care of the ex-service men.

Finally, it may be said with authority that the proposed reorganization of the work for the distribution of the benefits provided for disabled veterans has the approval of the Sur-

geon-General of the U. S. Public Health Service, of the Medical Department of the Army, of the Bureau of Medicine of the Navy, and of the governor of the Board of National Home for Disabled Volunteer Soldiers. The plan relieves the U. S. Public Health Service of much of the work imposed upon it, up to the present time, in the administration of districts, in the medical examinations of disability rating, in the fitness for vocational training and in inspection service. The U. S. Public Health Service will continue to supply hospitalization to compensable veterans in so far as its facilities permit. It is believed that this service will not interfere with the important functions for which the service was created and which it has performed with such great benefit to the country.

Claims Before Bureau of War Risk Insurance

An announcement just made by the Bureau of War Risk Insurance indicates that the bureau is now at work on claims amounting to 91,477, all filed by disabled former soldiers and sailors. The number of claims being received is increasing regularly, the average being about 1,000 per day. All facilities of the U. S. Public Health Service and the government, as well as private institutions, are being utilized to give medical care and treatment to those persons claiming compensation while the compensability of such persons is being established. There were during the last week in March 25,032 persons undergoing hospital treatment and 777,511 have been given medical care and treatment by the Bureau of War Risk Insurance.

Army Medical School to Enlarge

Enlargement of the Army Medical School is planned by the Medical Department of the Army just as soon as appropriations are made by Congress to cover the cost. At the present time the school is located on Louisiana Street in Washington, occupying leased buildings, but it will be transferred from its present location to a new home in Takoma Park alongside the Walter Reed General Hospital. The school's capacity is seventy-five commissioned students, but this will be greatly increased on the enlargement of the institution.

Surgeon-General Named for Board

Major-Gen. Merritte W. Ireland, surgeon-general of the Army, has been appointed as a member of a board to examine and settle claims between the Red Cross and the War Department that developed during the World War. The other members of the board are Major-Gen. John L. Chamberlain, inspector-general, and Col. Edward A. Kreger, judge advocate general's department.

Strength of Reserve Medical Corps

Surgeon-General Ireland states that the Medical Reserve Corps now numbers 6,421 officers, including 2 brigadier-generals, 101 colonels, 434 lieutenant-colonels, 2,057 majors, 2,851 captains, and 976 first lieutenants.

Government Control of Dairy Industry in the Netherlands.—To prevent a shortage of milk and milk product supplies, due to increasing demand for home consumption and excessive sales to Germany, the Dutch government recently established a dairy bureau, under the minister of agriculture, which controls the production of butter and cheese, etc., and regulates the distribution of sweet milk throughout the Netherlands. The office is supported by a tax on milk production. The minister of agriculture issues decrees at stated intervals indicating both the amount of cheese to be made and the percentage that may be exported. The bureau controls the distribution of fresh milk by purchasing it and reselling to dealers. To keep down the cost of milk to consumers the bureau loses the expense of transporting the milk from the farm to the distributing center.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 21, 1921.

The Future of Research in Tropical Medicine

In his presidential address to the Section of Tropical Diseases of the Royal Society of Medicine, Sir Leonard Rogers, while admitting the value of the work done by the expeditions of research workers to tropical countries, considered that the time had come to modify our methods. He attributed the value of his own researches to the good fortune of being able to carry out long-continued and patient investigations in a tropical country in a laboratory in the closest possible association with a wealth of clinical material, at the Calcutta Medical College. He was thus led to the conclusion that Calcutta presents the finest opportunities in the world for a great school and research laboratories of tropical medicine. To this institution a hygiene section is about to be added, and the services of ten government professors will be available with about three fourths of their time for research. Seven whole-time research appointments, two of which are held by Indian research scholars, are being financed. As each worker has one or more qualified Indian assistants, the total staff will number forty-two. Another school on similar lines has been organized in Bombay, which with four hill-top laboratories and the bacteriologic department of the Indian Medical Service and the pathologic laboratories of the medical colleges will place India in the forefront of research in tropical medicine. Had sufficient provision been made for similar work in other British tropical possessions? Much had been done in the last two decades with important results, such as the work on the cause of beriberi in the Kuala Lumpur of the Malay States, the tartar emetic cure of bilharziasis at the Wellcome laboratory of Khartoum, and the valuable work at the Queensland laboratory under Breinl and that of Macfie in West Africa, where the Sir Alfred Jones laboratory is being built at Sierra Leone. But what were these among so many? A few months ago Sir Leonard Rogers was invited to join an influential committee for the prevention of tropical disease; but on learning that it proposed to spend $150,000 on a single expedition to a very small and rather healthy (because malaria-free) West Indian island, he felt obliged to decline. He intimated that it should alter its policy to organizing permanent research laboratories in various British tropical possessions. If money was forthcoming and the support of the government could be obtained, he suggested that annual contributions toward the support of a research worker should be offered to selected British colonies on condition that the local authorities supplied a small and unpretentious laboratory adjacent to the largest available hospital. The worker should be appointed for five years, which was the shortest time any research worker should go abroad. The old plan of trusting entirely to temporary inquiries, with heavy costs for equipment and passages, and leaving no permanent organization behind the pioneers to carry on the work, should be abandoned.

Venereal Disease

A deputation of the National Birth-Rate Commission has laid before the minister of health the report of the special committee on venereal disease. The report has been compiled with great care and long deliberation after hearing the evidence of many eminent physicians, surgeons and venereologists. The committee included prominent physicians, medical women, bishops and other ecclesiastics. The ministry

of health sent three officers to assist in the inquiry, the American army also gave help. The report points out that there are two methods of arresting the spread of infectious disease—prevention of the conditions under which contagion occurs, and destroying by disinfection the organisms before they have penetrated the body. The first method is the best, and is that used for the control of yellow fever and malaria. In the case of venereal disease this means abstinence from promiscuous sexual intercourse. While the committee realizes that chastity is the best safeguard, it is compelled to recognize that a large number of persons, male and female, do not respond to moral appeals, but indulge more or less frequently in sexual intercourse. Both on the grounds of individual and of national welfare the committee thinks that steps must be taken to prevent intimate contact between healthy and diseased surfaces, or to destroy and prevent the growth of disease germs before they can penetrate the tissues. This means some method of disinfection as soon as possible after sexual intercourse, either by the individual or by, or under the supervision of a physician or trained assistant. The committee is in favor of "immediate self-disinfection," but points out that it is liable to failure in the hands of ignorant, unskilful or careless individuals, or those under the influence of alcohol or strong excitement. No difficulty should be placed in the way of either (1) the spread of knowledge as to the value of disinfectants, or (2) the obtaining of such disinfectants from pharmacists or other sources. The health authorities should afford instruction in the value of chastity as the only sure means of prevention, but should also claim due, though not undue, efficacy for self-disinfection. The inquirer should be told to regard this as a method of first aid in preventing a possible danger, to be followed by prompt resort to medical advice. If the ordinary man is both willing and able, after careful preliminary training, to carry out self-disinfection with promptness and efficiency, it should not be necessary or desirable that local authorities should provide at special ablution centers facilities which he ought to obtain for himself, in view of the fact that the risk has been incurred by his own misconduct. For the success of this method the present legal prohibition to the sale of disinfectants by pharmacists should be withdrawn. The pharmacists should not be allowed to advertise or recommend substances which have not been approved. Sale should be at a nominal cost, and the disinfectant should be accompanied by printed instructions approved by the ministry of health or local health authority. The committee cannot recommend legislation which would make it obligatory for all parties contemplating marriage to produce health certificates.

In any appeal to the public, four conditions should be urged: (1) chastity as a moral obligation consistent with good health, and the only sure preventive; (2) the moral obligation to consult a physician if exposure to risk has occurred or disease has been contracted; (3) the serious risks involved and appeal to family affection, patriotism and humanity; (4) self-disinfection.

Darwin's Theory of Man's Origin

Beginning a series of lectures on this subject at the Royal Institution, Professor Keith said that it is now fifty years since the "Descent of Man" fell like a bombshell on the world. Writers are now fond of saying that the Darwinian theory has broken down; but biologists know that it has been much better substantiated, and in its broad outlines it stands. If called to edit that famous book, Professor Keith said that he would scarcely alter a single statement but he would have much to add. Additional evidence has accumulated since Darwin's time, comprising: 1. An improved knowledge of embryology. Thanks to the unrequited labors of hundreds of embryologists, every stage in man's development except the first four or five days is known. It all supports Darwin. 2. The discovery of fossil man with features found nowhere today in living man but present in apes. 3. Human weapons found in geological strata, which carry man back 1½ million years or more. 4. Increased knowledge of the anatomy of apes. 5. Experimental physiology. In his experiments on the brain, Horsley found that the animals nearest to man, such as the orang-utan, are the best guide. Sherrington found the same. 6. Experimental pathology. The animals nearest to man are those most inoculable with his diseases, the chimpanzee and the orang-utan, as, for example, in the inoculation of syphilis. The domesticated chimpanzee is liable to have appendicitis. 7. The blood affinity of the chimpanzee and the anthropoid apes to man, the greatest among animals. 8. The discovery of hormones. This would have helped Darwin in his great difficulty. How do favorable characters arise? Their survival afterward is an easy matter. Take as a concrete instance the evolution of the human from the simian hand. Long before the fetus moves its hands it has folds adapted to movements. Darwin said that there must be some mechanism by which use and disuse are inherited, that the habits of the race bear back on the seed. The physiologists of his time could give him no hint as to how useful variations arise, so he framed the theory of "pangenesis." He supposed that there was an extraordinary "postal system" by which cells threw their experiences into the circulation and reached the germ cells, where they were stored. No one believed him, but his hypothesis, at that time, was an extraordinarily acute forcast of the hormone mechanism.

We now recognize that the shape and action of man's body depend on the secretions of the endocrine glands. Every modern girl knows that if she devotes herself to athletics she must expect to take larger gloves and boots, but she does not know how this is brought about. If her pituitary responds readily to muscular efforts by liberating the hormone which gives her hands and feet the power to respond to their new burdens by increase in size and strength, her worst fears will come true. The varying power of the pituitary in different persons is shown by the experience of athletic trainers. They know that some men can put on a great chest in a month, while others cannot in a year of training. The pituitary hormone is part of the automatic mechanism which adapts and shapes old parts of the body to new functions. It is part of the evolutionary machine. In acromegaly the disordered pituitary floods the circulation with one of the elixirs of adaptation and the least exertion gives overgrowth. A blessing has become a curse. The other endocrine glands also influence growth. Indeed, every endocrine gland influences the mind as well as the body. By means of these glands, new races have been evolved in the past and will be evolved in the future.

Campaign Against Venereal Disease in the Far East

A commission appointed by the National Council for Combating Venereal Diseases, sent out to the Far East under the egis of the colonial office, has just completed a campaign in Shanghai, which the commission reached early in December. The Shanghai municipal council had appointed an advisory committee to make arrangements for the stay of the commission, and the campaign opened with a representative conference convened by the council. Publicity was secured through the medium of the press and by the issue of handbills through the principal firms and voluntary organizations. Full facilities were given for the visiting of all institutions under the control of the municipal council, and various hospitals, prisons, licensed quarters and clubs were inspected. As requested by the municipal council, the commissioners formulated their recommendations in a report presented to a

special joint session of the municipal watch and health advisory committees. This report was published in the *Municipal Gazette*, a weekly issue widely read by the foreign community, and urged that facilities for the free diagnosis and treatment of venereal diseases should be provided by the municipal council; that their health and educational departments in cooperation with voluntary organizations should secure the education of the public with regard to venereal diseases, and that all possible steps should be taken to suppress prostitution. The commission held educational conferences for heads and teaching staffs of schools, and medical conferences with physicians, showed "Damaged Goods" on the film, and organized a public meeting for foreigners resident in Shanghai. It is believed that much of the program recommended by the commissioners will be carried out, and that in any case the appointment of a venereal disease officer and the provision of free treatment for seafarers will be considered in the immediate future.

Rejection of "The Irresistible Impulse" as a Plea in a Murder Case

In a murder trial at Manchester, a physician gave evidence for the defense that the prisoner was suffering from an "irresistible impulse" and was not sane at the time of the crime. This was revealed to him when the prisoner was in a hypnotic trance and was borne out by an exhaustive examination afterward. Every particular of his conduct after the act, even his expression of satisfaction, was consistent with this view. He showed an extraordinary misconception of the enormity of his act. Rebutting evidence was called for the prosecution. A warder had observed nothing unusual about the prisoner; he was always in good spirits. The medical officer of the prison said that he had the appearance of having lived a debauched life, but there was nothing abnormal or strange in his manner. Another prison medical officer had also found him quite rational. He was asked, "Do you recognize an 'irresistible impulse' apart from insanity?" He said, "Yes; it may be the only symptom of insanity." But in such a case he would expect to find no premeditation but only an impulse which recurred from time to time. When the crime was committed there would be a mental struggle before the will gave way, and after it a feeling of relief. Afterward the man would be distressed and horrified. In this case there was premeditation: the prisoner bought the knife with which he committed the murder and sharpened it on both edges. The judge pointed out that the only evidence of uncontrollable impulse was that of a medical expert based on what the prisoner told him. A verdict of guilty was returned.

The Abolition of the Secrecy of Trials for Incest

In consequence of the secrecy of trials for incest, it constantly happens that persons are prosecuted for acts which they do not know to be criminal. Judges and the law officers of the Crown are virtually unanimous in favor of removal of the secrecy. In the House of Lords the Lord Chancellor has moved a new clause to the Punishment of Incest Act which repeals the section requiring that all proceedings shall be held in camera. He believed that unless there was some objection to the proposal which he had overlooked it would be a very useful reform. The amendment was agreed to.

Increase of Cancer

The deaths attributed to cancer unfortunately continue to increase. They numbered in England and Wales, in 1919, 42,144; 18,723 males and 23,421 females. For both sexes these numbers are the highest recorded. The most recent figures available, for the first quarter of 1920, show 10,746 deaths; 4,833 in males and 5,913 in females.

MADRID

(From Our Regular Correspondent)

March 9, 1921.

Antimalaria Campaign

Dr. Pittaluga, president of the commitee for the sanitation of malarial regions, has delivered an interesting lecture in the Madrid Ateneo. He presented figures and data to show the importance of malaria as a public health problem in Spain. Every year 2,500 persons die from malaria. As the proportion of deaths to cases in this disease is 7 per thousand, the number of patients must be about 400,000 a year. Supposing, as a minimum, that the disease lasts twenty days, computing daily wages at 3 pesetas, and adding the loss from wages to the loss represented by deaths (even if we place on each human life the minimum value of 5,000 pesetas), this would represent in Spain a yearly loss of about 40,000,000 pesetas (about $6,000,000). To combat this scourge, the national budget carries only an item of 200,000 pesetas to suppress epidemics. This means that malaria must be controlled out of these funds with all the other infectious diseases. This sum is so ridiculously inadequate that not long ago the king wanted to have 500,000 pesetas devoted to an antimalaria campaign; but as yet this has not been done. In Talayuela, a town of the province of Cáceres, the malaria committee has begun its sanitary efforts. Since October, physicians and lay assistants have been looking there for germ carriers and giving them quinin; besides, they determine the presence of mosquitoes and carry out drainage works, in addition to house and individual prophylactic measures. In one or two years from now, when results will be apparent, they will show this place as an object lesson to the whole country, saying, "Here is what we have done with the money you furnished." Spain will then understand how advantageous it would be to carry out the campaign on a larger scale. In this work, besides the Spanish personnel, some prominent foreigners are also taking part, as Professor Sella, chief of the malaria section of the Geneva central office of the League of Red Cross Societies.

Dr. Chutro in Madrid

Dr. Chutro, who gained such a high reputation in Paris as a surgeon during the war, is now returning to Argentina to fill his chair of surgical pathology in the Medical School of Buenos Aires. On his way, he stopped in Madrid where he was shown many courtesies. Dr. Chutro gave several lectures which were much appreciated. At the medical school, he lectured on the treatment of fractures of the femur, advising the continuous extension of both lower extremities and not only of the fractured one. He explained how to carry out mobility of the knee so as to preserve extremities which, though shortened, may give good service. In the Royal Academy of Medicine he delivered a lecture on the pathologic relations between the right kidney and the colon. He laid stress on the fact that surgery is abandoning operations which used to be much in favor. Thus, years ago many kidneys were fixed; then, many appendicostomies were performed, and now surgeons operate on the ascending colon, plicating it when it is dilated.

Dr. Rodriguez Abaytua Leaves His Fortune to the Royal Academy of Medicine

Dr. Rodriguez Abaytua, prominent thinker, philosopher and specialist in diseases of the digestive tract, has just died in Madrid, where he practiced his profession and where all his works have been published. His first book, "Medical Thermometry," made him famous. Since the publication of that book forty-five years ago, he has written more than twenty books, including his last two, "Biochemical Phenomena from the Standpoint of Philosophy" and "Nutritive Bio-Energy and Thermometry." He was a tireless worker, a man with

an encyclopedic mind, and bequeathed to the academy a large modern library. He had no enemies. His life was exemplary; in his abstemious and aristocratic manner he recalled those monks of the middle ages who devoted their lives to religion and alchemy. As he did not want to waste a minute of his time, he lived alone and never married. He considered instead all physicians as his family, and on dying he left his whole fortune, nearly 2,000,000 pesetas, to the Royal Academy of Medicine, which will act as executor and decide which books should receive prizes according to the giver's wishes.

PARIS

(From Our Regular Correspondent)

March 25, 1921.

The Dangers of Ethyl Chlorid Anesthesia

The use of ethyl chlorid for general anesthesia is becoming more and more widespread, and the tendency is to regard it as an anesthestic entirely devoid of danger. However, the communication that Dr. Courtois-Suffit, physician to the hospitals of Paris and medicolegal expert, recently presented to the Academy of Medicine shows that this is far from being the case. Courtois-Suffit was recently charged by judicial authority to perform a necropsy on the body of a woman who died suddenly during a general anesthesia, produced by ethyl chlorid, for the purpose of extracting a carious tooth. The woman, accompanied by her husband, had presented herself to a dentist, requesting that he extract a decayed tooth that the dentist in her home town was not in a position to remove. On account of the bad condition of the gums, the dentist thought best to operate under general anesthesia, and for this purpose he referred the patient to a physician, who, after a thorough examination of the patient, agreed to give the anesthetic. The operation took place the same evening. Two ampules of ethyl chlorid were used in an improvised mask. The patient went under readily, but the dentist being unable to extract the tooth at the first attempt and the patient showing signs of returning consciousness, a third ampule was used, the mask being put back again. The patient immediately began to present respiratory difficulties, and death ensued in spite of all attempts at restoration: hypodermic injections, artificial breathing, and the like. Courtois-Suffit reached the conclusion that death was due to anesthesia by ethyl chlorid. There was no previous affection or condition that could be considered a contraindication to the operation, and no error in technic or otherwise was committed. It was merely an accident analogous to those resulting from anesthesia produced by chloroform or ether.

Courtois-Suffit thinks that it might be possible to avoid these accidents by indicating with greater precision the character of the technic to be followed in this mode of narcosis, as has already been done with regard to chloroform and ether. One point in particular seems already clearly established: Accidents resulting from the use of ethyl chlorid occur generally when, after a first dose of ethyl chlorid has been given, it becomes necessary, owing to the fact that the patient shows signs of returning consciousness before the end of the operation, to admit air within the mask in order to give a supplementary dose of the anesthetic. That is precisely what happened in the case of the patient over whose body Courtois-Suffit held the necropsy, since the death of the patient occurred after a second administration of ethyl chlorid.

Election of Professor Rénon to the Academy of Medicine

At a meeting, March 15, the Academy of Medicine took up the election of a corporate member in the section of therapeutics, to fill the vacancy caused by the death of Professor Debove. Dr. Rénon, who was recently appointed professor of internal pathology in the University of Paris Medical School, was chosen by sixty-one votes out of sixty-six.

VIENNA

(From Our Regular Correspondent)

March 22, 1921.

Empty Schoolrooms

In 1920, 34,197 persons died in Vienna; the number of births was only 27,821. This year the surplus of deaths over births amounted to 1,220 in the first ten weeks. The low number of births is manifested also in the decreasing number of children entering the first grades of the public schools. Oct. 1, 1910, 36,000 children of 6 years were enumerated in all schools in Vienna; on the same date in 1919, only 25,400 were present. The figures for 1921 have been calculated at 20,000. For the year 1923 only 15,000 children are expected to enter the schools, and for next year only 13,000 children aged 6 years are figured on; i. e., 35 per cent. of the number entering in 1910. These figures are fairly safely arrived at by considering the birth rate of the war years. The children missing in the schoolrooms will also be missing if the number of working persons is considered. In eight years there will be a lack of apprentices; in twelve years, assistants and junior clerks will be rare and skilled workmen will not be available, while those present and working at that time will be less fit for the prolonged work required. The generation of the next ten or fifteen years will not be up to the mark in physical efficiency. Only 15 per cent. of the total of school children were classified as not underfed, and there will be little improvement in the condition of the remainder. The empty schoolrooms are a bad symptom and a bad prognosis for this country's restoration.

Hospital Beds for Tuberculous Children

Austria can boast at present of no more than 2,000 beds in hospitals and sanatoriums for the treatment of tuberculous children, of which number Vienna alone has 430 beds for internal tuberculosis and 360 beds for surgical tuberculosis. In the country there are only a few institutes appropriately fitted with all requirements, of which may be mentioned Krems with 300 beds for suspicious cases, and three institutes in the Alps organized for sun treatment. Owing to the generosity of the Swedish Red Cross, a hospital for 350 surgical cases has been recently added to the existing ones, and various smaller institutes have been opened wih the aid of the government in the well known Fordine brine baths of Hall and Ischl. Endeavors are being made to induce the erection of temporary insolation pavilions in the Alpine districts for such children as require no direct medical or surgical interference; heretofore the financial problem has proved to be a most serious drawback of this eminently prophylactic undertaking. It is a sad feature of the fight waged by the board of health against this menacing disease that it must turn to grants and gifts from foreign countries to obtain means for its purposes. Only recently it was put in a position to open a small pavilion for tuberculous nurses who fell victims to the disease while in active service, during the war, among the soldiers.

Higher Taxes and Fees for Foreign Students

The Rockefeller Foundation in New York has granted a gift of $60,000 to the three universities in Austria for the purpose of purchasing such apparatus and requirements as cannot be obtained in this country but are necessary for the upkeep of scientific medical institutions. The prohibitive exchange rates will thus no longer throttle the teaching in our institutes. The generous gift was granted under the condition that the fees for foreign students be raised in a reasonable degree; for it is deemed unfair that the Austrian state, in spite of its financial position, should enable foreigners to follow up their studies here by paying fees which fall far below the actual costs and were much below the costs of

studying abroad. Thus, by order of the board of education, foreign students at the three medical faculties in Austria—Vienna, Graz and Innsbruck—have to pay twenty-five times higher fees for lectures and laboratories than Austrians and ten times higher fees for the diploma. Thus, a diploma will cost 9,000 kronen ($15), while each lecture (one hour a week) will cost about 250 kronen a term, or about 40 cents. If the student takes courses lasting twenty hours a week, he will have to pay for the term (semester) about 6,500 kronen ($10) all told. That is still cheap enough. Altogether, a sum of five million kronen is expected to accrue from this source in Vienna alone which will be allotted entirely to the augmentation of the funds for the outfit of the laboratories and institutes of the medical faculty. But this measure is rather of the nature of a two-edged weapon. A good number of foreign students taking their degrees in Vienna come from the now foreign countries, formerly part of the broken-down empire. Their exchange rates are not twenty-five times higher than our own; and they will no doubt cease to flock to Vienna, and thus the commanding position of Vienna as the university for eastern Europe may be in danger. Due precautions against such an outcome must be taken into consideration.

Laparatomy for Determination of the Patient's Sex in Hermaphrodism

At a recent meeting of the Vienna Medical Society, Professor Meixner showed a child, aged 9 years, whose sex could not be ascertained until that age. The child had a very large clitoris, two very prominent fat ridges like labia majora, and a small fossa navicularis leading into a blind sac, presumably the vagina. In order to find out definitely whether the individual was male or female, Professor Meixner suggested a laparatomy. This was performed, and showed the presence of a bicornate uterus, attached to it an organ recognized by the gynecologists present at the operation as a normal ovary, and on the other side a small brownish organ which immediate microscopic examination proved to be a rudimentary testis. The operation thus definitely settled the question of sex in favor of a female. An interesting discussion ensued the demonstration, in which the admissibility of a laparatomy for this purpose was questioned. Professor Meixner, however, insisted that laparatomy, being a safe and simple procedure nowadays, was not so serious as numerous other operations performed on children for even minor ailments. The importance of ascertaining as early as possible the true sex of a child would permit of an operation. Professor Schnitzler pointed out that the misinterpretation of true sex sometimes led to appalling conditions. In one case a child supposed to be a boy had twelve plastic operations for the formation of a penis performed on his urethra with the result that he actually urinated through a penis-like tube, when at the age of 15 two well developed female breasts appeared and the true female characteristics of the being came forth. Still, such an operation could be done only with the permission of the parents and the consent of the board of guardians.

Special Graduate Courses in Vienna

The Vienna Medical Faculty has organized for the benefit of practitioners desiring to keep in touch with the progress in medicine a series of graduate courses covering the whole field of medicine so far as diagnosis and treatment are concerned. The courses take place in April, June, September (this one chiefly for country physicians) and December. They last two weeks and are arranged in such a way that a number of lecturers deal with a certain subject on the same day. Thus two days are devoted to diseases of the heart and the circulatory system, one day to the problem of the kidney function, two days to the diseases of the alimentary tract (including surgical aspects), one day to problems of metabolism and nutrition, and one day each for balneotherapy, including open air treatment, and for modern views on phthisis, the blood, the endocrines, the brain, the nerves and organs of locomotion, as well as radium treatment and the treatment of general paralysis and tabes. The fees are low, 1,000 kronen, about a dollar and a half, for foreigners and 200 kronen for Austrians for the two weeks; the lectures are given from 9 to 12 and from 2 to 6 p. m., and the lecturers have consented to give over their fees to the funds for the upkeep of the university institutes.

Malaria Statistics for 1920

Since the end of the war, malaria has become a fairly frequent and well known disease in our country, while formerly it was more of a theoretical interest for our practitioners and students. In fact, smallpox and malaria could hardly ever be shown in Vienna at the clinical lectures in the years between 1895 and 1914. They were rarities. Now with the return of our prisoners of war from long-standing captivity, as well as through soldiers coming from the fighting lines in Russia, Turkey, Italy, Albania and other distant countries, these diseases appeared in daily increasing numbers. In fact Vienna had to establish a special malaria hospital of enormous extent to deal with all exigencies. In 1920 there were reported, however, only 1,603 new cases in all the country, of which 388 were observed in Vienna alone. Naturally, when the bulk of the prisoners returned from Italy and Siberia (1918-1919) the figures were highest. Thus January to June showed more than 1,400 new cases. Altogether, Dec. 31, 1920, the number of malaria cases reported to the board of health since 1918 reached the figure of 10,610. In Vienna alone, 4 526 cases were reported. In parenthesis it may be mentioned that for the first time since the war, one week was reported as being completely free from epidemics (week ending March 19) in this country.

BERLIN

(From Our Regular Correspondent)

March 12, 1921.

Personal

The prize of 25,000 marks, established two years ago by the late Berlin bacteriologist Prof. Hans Aronson, has been awarded to Prof. von Wassermann for his investigations on the Wassermann reaction.——As successor of Prof. O. Hertwig, who is retiring, the name of the Heidelberg anatomist Professor Braus has been mentioned.——Professor Bonnet of Bonn, formerly head professor of anatomy, recently celebrated his seventieth birthday.——As the successor of Professor Grawitz, Greifswald, who is retiring, the name of Professor Gross of Heidelberg has been proposed as ordinarius for pathologic anatomy.——February 24, the Berlin Ophthalmologische Gesellschaft held a special session in honor of the semicentennial of Albrecht von Graefe's death. The only living former assistant of Graefe, the ophthalmologist Prof. Julius Hirschberg, delivered an excellent memorial address in spite of his advanced age—78.

Instruction in Hygiene in the Schools

More and more the idea is gaining ground that the expensive institutions are not the most important thing for the preservation and amelioration of the health of a people, but that the main thing is to secure the cooperation of the individual. Hygienic teachings and hygienic institutions must, therefore, fail of their purpose so long as the people take no interest in them. This fact is brought out by Professor Selter, the director of the Königsberg Hygienic Institute, in an article in the *Deutsche medizinische Wochenschrift* in which he advocates instruction in hygiene in the schools. He

expresses the view that the expensive tuberculosis sanatoriums have not exerted so favorable an influence on the mortality from tuberculosis as was expected. The welfare stations for tuberculous patients he thinks have proved of greater value in that an influence has been brought to bear on the patients within the family circle. Likewise, he thinks that infant mortality can be better combated by giving the mother a correct understanding of how to care for her child than by erecting special homes for infants.

But the best and most effective means of promoting the public health is by hygienic instruction in the schools. Attempts to have such hygienic instruction given by the school medical examiner have not proved successful. Hygienic instruction must, therefore, be turned over to the regular teachers. Such a plan presupposes good hygienic training of the teaching personnel. Selter therefore demands that not only the principals of the public schools but also the whole teaching force be required to pursue courses in hygiene. Teachers must present a more thorough knowledge of anatomy and physiology than has been the case in the past. "Of every skilled workman," the writer says, "the demand is made that he must be familiar with the construction of the machine that he operates, but to teachers we turn over our children—our most valuable possessions—without requiring that they shall be familiar with the human organism." It is well known today that the brain of a child is not an organism of such simple construction as was formerly supposed, and that the mental powers of a pupil are to a great extent dependent on the character of his bodily constitution. Instruction in hygiene should be woven into the whole course of instruction. In the upper classes, special lessons in hygiene can be provided. In the case of the girls, hygienic instruction should be combined with instruction in domestic science, and it should take into account their future occupation as housewives and mothers.

A New Type of Health Certificate

Dr. Czellitzer, the Berlin social hygienist, has presented to the Berlin Gesellschaft für öffentliche Gesundheitspflege a plan by which the birth certificate, the vaccination certificate, the individual health report of the infant welfare stations and the health report of the school medical examiner may be combined so as to constitute a single health certificate, which he thinks might follow the child not only from the time of his birth until he enters the continuation school, but, on his entrance into industrial life, might be handed on to the health insurance society (Krankenkasse) in which he is registered, in order that it might serve here, as in the schools, to secure a survey of all persons whose health is such as to require governmental control. From the time the child is 3 months old, at which age all Berlin children must be registered in the welfare station of the quarter in which they reside, the health certificate would remain in the hands of the officials of the walfare station. At the age of 6, when the child enters school, it would be handed over to the school. Thence it would be sent automatically to the vocational guidance bureau, whose function it is to give advice on the choice of one's life work, thence to the continuation school, and finally, to the health insurance society. The entries in the health certificate in regard to physical development, family history, diseases undergone, and the like, would give every physician attending the individual the desired scientific background, and every physician called on to pass on disability claims would thus have just the material he needed in order to form an opinion in regard to diet, where the individual should spend vacations, adaptation to various trades and professions; in fact, he would be in a position to give advice even on marriage. Health certificates, after the death of their holders, would be collected in a central bureau, where they would furnish most excellent material for the study of questions pertaining to heredity.

Marriages

JOHN B. BAUGUSS, Surg., U. S. P. H. S., to Miss Anna Schlafendorf of Gloversville, N. Y., at Houston, Texas, February 25.

ABRAHAM LINCOLN BLESH, Oklahoma City, to Miss Beatrice Rogers of Sulphur, Okla., at Ardmore, Okla., January 22.

NEEDHAM BRYANT BROUGHTON, Raleigh, N. C., to Miss Sonia Helen Bell of Wakefield, N. C., March 19.

CHARLES BROWN HUESTIS, Omaha, to Miss Mary Bennett of Brooklyn, at New York, February 21.

BENJAMIN FRANKLIN LORANCE and Miss Pearl Stevenson, both of Auburn, Neb., February 17.

ALLEN HOYT MOORE, Clover, Va., to Miss Faye Allstatt of Kokomo, Ind., March 15.

HARRY WILLIAM ARNDT to Miss Ethel Williams, both of Frazee, Minn., March 19.

Deaths

William Owen Roberts, Louisville, Ky.; University of Louisville, Ky., 1870; Bellevue Hospital Medical College, 1871; aged 72; emeritus professor of surgery and clinical surgery in the University of Louisville; president of the Kentucky State Medical Association in 1914, and of the Southern Surgical and Gynecological Association in 1916; chief surgeon for the Louisville and Nashville Railroad for nearly forty years; died, April 1, from chronic interstitial nephritis.

John Clayton Taylor ● Asst. Surg., Lieut. (j. g.), M. C., U. S. Navy, Norfolk, Va.; Medical College of Virginia, Richmond, 1917; aged 32; entered the U. S. Navy in 1917, and was on duty at Norfolk; was shot and instantly killed by a sentry at the naval base, January 30, when, it is alleged, he disregarded an order to halt.

Hemon Hampton Brown ● Chicago; University of Michigan, Ann Arbor, 1886; aged 57; formerly president of, and professor of ophthalmology in the Illinois Medical College, Chicago; formerly president of the Chicago Ophthalmological Society; died at Orlando, Fla., April 10.

Frank Anderson ● Med. Dir., Capt., M. C., U. S. Navy (retired), Washington, D. C.; College of Physicians and Surgeons in the City of New York, 1874; aged 68; entered the U. S. Navy in 1875 and was retired in 1914; died, March 31, from heart disease.

Frank Lafayette Thigpen, Hookerton, N. C.; Jefferson Medical College, 1917; aged 26; a member of the Medical Society of the State of North Carolina; lieutenant, M. C., U. S. Army, and discharged, Feb. 28, 1919; died, February 27, from pneumonia.

William Thaddeus Gabbert, Fayetteville, Ark.; St. Louis College of Physicians and Surgeons, 1889; aged 53; died in Fort Smith, Ark.; St. Louis College of Physicians and Surgeons, 1889; aged 53; died in Fort Smith, Ark., March 20.

Charles Wilmot Coburn, Philadelphia; Jefferson Medical College, 1893; aged 54; died at Carrizio, N. M., March 29, on board a passenger train en route to California for recuperation following an attack of influenza.

John Coy Farmer ● McKinley, Minn.; University of Minnesota, Minneapolis, 1895; aged 49; founder and superintendent of McKinley (Minn.) Hospital; lieutenant, M. C., U. S. Army, during the World War; died, February 9.

Larned Van Patten Allen, Davenport, Iowa; Rush Medical College, 1912; aged 34; a member of the Iowa State Medical Society; captain, M. C., U. S. Army, and discharged, Dec. 23, 1918; died, March 31, from scarlet fever.

Ransford Everett Van Geisen, Brooklyn; College of Physicians and Surgeons in the City of New York, 1859; aged 84; a practitioner of Brooklyn for sixty years; died, April 1, from pneumonia.

Harry Ferris Taylor ● Mount Clemens, Mich.; Michigan College of Medicine, Detroit, 1886; aged 58; captain, M. C., U. S. Army, and discharged, Dec. 3, 1918; died, March 17, from pneumonia.

Julius Schoenith, Detroit; Michigan College of Medicine and Surgery, Detroit, 1893; aged 70; a member of the Michi-

● Indicates "Fellow" of the American Medical Association.

gan State Medical Society; died, March 6, from cerebral hemorrhage.

Willard Rodney Fitch, Medina, N. Y.; University of the City of New York, 1851; aged 95; assistant surgeon, New York Volunteer Infantry, during the Civil War; died, March 26.

Harry J. Hartz ● Philadelphia; Jefferson Medical College, 1908; aged 38; a member of the staff of Jefferson and Methodist hospitals; died, March 31, from gastro-intestinal disease.

William Henry McIlhaney ● Easton, Pa.; Jefferson Medical College, 1885; aged 65; a member of the local school board for many years; died, March 28, from heart disease.

George Henry Davis, Shiprock, N. M.; Sioux City (Iowa) College of Medicine, 1905; aged 45; lieutenant, M. C., U. S. Army, and discharged, Oct. 26, 1919; died, February 27.

Wharton D. Little ● Maiden Rock, Wis.; College of Physicians and Surgeons, Keokuk, Iowa, 1887; aged 52; died at Bethesda Hospital, St. Paul, March 27, from ascites.

Philip N. Matlock, Minnick, Tenn. (license, Tennessee, 1889); aged 76; a member of the Tennessee State Medical Association; a Confederate veteran; died, March 25.

John Martinez Cardesa, Brooklyn; Long Island College Hospital, Brooklyn, 1906; aged 41; physician to Long Island College Hospital; died, March 30, from pneumonia.

James R. Thompson ● Pittston and Fortyfort, Pa.; Jefferson Medical College, 1877; College of Physicians and Surgeons, Baltimore, 1893; aged 52; died, March 19.

William Richeson, St. Paul; Medical College of Ohio, Cincinnati, 1863; aged 85; surgeon of the Fifty-Third Ohio Regiment during the Civil War; died, March 11.

David M. Currier, Newport, N. H.; Dartmouth Medical School, Hanover, N. H., 1867; aged 80; a member of the New Hampshire Medical Society; died, March 1.

David Gibbs Fleming, Chatham, Ont.; Victoria University, Cobourg, Ont., 1868; L.R.C.P., L.R.C.S. (Edin.), M.R.C.S. (Eng.), 1869; aged 79; died, March 16

Robert James Wilson, Toronto, Ont.; Victoria University, Cobourg, Ont., 1886; L.R.C.P. (London) and R.C.S. (Eng.), 1886; aged 59; died suddenly, March 19.

J. C. B. Foster, Owenton, Ky.; Louisville (Ky.) Medical College, 1877; aged 70; a member of the Kentucky State Medical Association; died, March 26.

Benjamin A. Allan, Louisville, Ky.; Hospital College of Medicine, Louisville, Ky., 1878; aged 62; died, March 31, from hypostatic pneumonia.

Ernest Llewellyn Wrentmore, Warren, Ohio; Western Reserve University, Cleveland, 1901; aged 46; died, February 23, from heart disease.

Lee Haselwood, Louisville, Ky.; Indiana University, Bloomington and Indianapolis, 1919; aged 33; died, March 26, from heart disease.

William E. Morgan ● La Grange, Ga.; Atlanta (Ga.) College of Physicians and Surgeons, 1898; aged 45; died, March 9, from pneumonia.

Elisa Louise Orleman, Detroit; University of Michigan Homeopathic Medical School, Ann Arbor, 1887; aged 64; died, February 27.

John Nelson Winston, Valley Head, Ala.; University of Louisville, Ky., 1866; aged 82; died, February 26, from arteriosclerosis.

Safford R. Hamer, Denver; Medical College of Ohio, Cincinnati, 1868; aged 83; a veteran of the Civil War; died, about March 25.

George Hasleton Post, Fithian, Ill.; Electic Medical Institute, Cincinnati, 1875; died, March 9, following surgical operation.

Henry Colistus Carroll, Canandaigua, N. Y.; College of Physicians and Surgeons, Chicago, 1899; aged 70; died, March 6.

Wilbur Allerd Bumpe ● Dexter, Maine; University of the City of New York, 1879; aged 66; died, March 11.

Elebertus Bolink, Seattle; Long Island College Hospital, Brooklyn, 1885; aged 75; died, February 6.

Joseph Henry Ablett, Lansing, Mich.; Cleveland Medical College, 1893; aged 62; died, February 8.

Correction.—The announcement of the death of Dr. H. P. Wilson, THE JOURNAL, April 2, was an error as Dr. Wilson writes (page 1121) that he is still among the living.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

SOME OF LOESER'S INTRAVENOUS SOLUTIONS

Report of the Council on Pharmacy and Chemistry

The Council has authorized the publication of the following report on "Loeser's Intravenous Solution of Hexamethylenamin," "Loeser's Intravenous Solution of Hexamethylenamin and Sodium Iodid," "Loeser's Intravenous Solution of Sodium Salicylate," "Loeser's Intravenous Solution of Salicylate and Iodid," "Loeser's Intravenous Solution of Sodium Iodid" and "Loeser's Intravenous Solution of Mercury Bichlorid," put out by the New York Intravenous Laboratory, Inc.

W. A. PUCKNER, Secretary.

The intravenous solutions of "Hexamethylenamin," "Hexamethylenamin and Sodium Iodid," "Sodium Salicylate," "Sodium Salicylate and Sodium Iodid," "Sodium Iodid" and "Mercuric Chlorid" marketed by the New York Intravenous Laboratory, Inc., are solutions of official substances sold under their official names. They would, therefore, be outside of the scope of the Council, were it not that special and general therapeutic claims are made for them. Such special claims, for instance, are contained in an advertisement in the *Illinois Medical Journal* for Oct. 20, 1920, which gives, under the various drugs, a list of diseases in which the drugs are said to be "indicated." The Council is unable to agree with some of these recommendations. The fundamental objection, however, is the general claim of superiority and safety of the intravenous method.

The intravenous solutions named above would naturally have little sale if such special claims were not made for them. While the claims may not be made directly, they are carried by such display phrases as: "For the progressive physician seeking improved clinical results" and "A safe practical office technique."

The Council continues to hold that intravenous medication, generally, is not as safe as oral medication even with relatively harmless substances (a fact again illustrated by the results of Hanzlik and Karsner 1920, *Journal Pharmacology and Experimental Therapeutics*, 16, 379), and that it does not give "improved clinical results" except under rather narrowly confined circumstances—namely, if the drug undergoes decomposition in the alimentary tract, if it is not absorbed, if it causes serious direct local reaction or if time is an urgent element. Each intravenous preparation for which advantage over oral administration is claimed, directly or by implication, must be examined from these points of view.

The Council has recognized intravenous preparations which satisfied these requirements. It is evident, however, that hexamethylenamin, sodium iodid and sodium salicylate do not. When given orally they do not undergo material decomposition in the digestive tract, they are rapidly absorbed, they cause no direct local reaction, and in the conditions in which they are used the hour or so which is required for absorption is immaterial, especially as they are used continuously for some time. Mercuric chlorid does indeed produce some local irritation, but there is as yet no convincing evidence that its intravenous injection causes less injury than oral administration. More experience under controlled conditions is needed before the intravenous use of mercuric chlorid can be approved. Especially objectionable are the fixed proportion mixtures of sodium iodid with sodium salicylate and with hexamethylenamin. The dosage of all three drugs has to be adapted to individual conditions. This is impossible when giving them in fixed proportions.

The Council voted not to accept "Loeser's Intravenous Solution of Hexamethylenamin," "Loeser's Intravenous Solution of Hexamethylenamin and Sodium Iodid," "Loeser's Intravenous Solution of Sodium Salicylate," "Loeser's Intravenous Solution of Salicylate and Iodid," "Loeser's Intravenous Solution of Sodium Iodid" and "Loeser's Intravenous

Solution of Mercury Bichlorid" for New and Nonofficial Remedies because they are sold under misleading claims regarding their alleged safety and efficiency. In view of this fundamental objection the individual claims for each preparation were not passed on.

Correspondence

TEST OF PHYSICAL EFFICIENCY

To the Editor:—In a recent issue of THE JOURNAL (March 12, 1921) Captain Scott reports on the use of certain physical efficiency tests—Schneider's and Crampton's—which he compares. He uses as a test for the reliability of these tests their coincidence with the findings of the neuropsychiatry department. It is gratifying to note this evidence of increasing interest in tests of the efficiency of the circulation. After I first presented my test (*Med. News*, Sept. 16, 1905), little attention was given to the subject until 1913, when the work of Foster, Meylan and McCurdy appeared. Kahn and Barringer followed, and during the last five years considerable attention has been given to the subject, including a notable paper by Sewall (*Am. J. M. Sc.* **157**:573 [Dec.] 1919) and Smith (THE JOURNAL **71**:171 [July 20] 1918). These are somewhat summarized by my recent report (*Am. J. M. Sc.* **160**:721 [Nov.] 1921), but it was left to Schneider to assemble most of these tests and melt them together into one index in his work with aviators reported in THE JOURNAL (**74**:1507 [May 29] 1920). Schneider's six tests include two I originally suggested, i. e., the action of the heart rate and the systolic blood pressure on rising from the horizonal to the vertical position, and in addition four additional notations: reclining pulse, standing pulse (both of which are noted in my tests) with the pulse after exercise and its return to normal. It therefore possesses five pulse rate items as against one blood pressure item, whereas my test included one blood pressure and one pulse rate item. The fact that Schneider's index showed a closer coincidence to neuropsychiatry findings than mine is possibly explicable on this basis.

But the strength and weakness of Schneider's index lie in its inclusiveness, although he omits the important evidence of circulatory condition presented by Greupner and developed by Barringer. It is true that the more functional elements of the circulation we can test the better position we hold to determine its efficiency; but when we seek to make an index of the results of all of these tests for the purpose of evaluating the total efficiency of the circulation, difficulties arise. I found it hard enough to adjust two scales of frequencies, i. e., heart rate and blood pressure, to each other with statistical accuracy over a short range, and I do not claim a coincidence of significance beyond a reasonable degree. To make a scale for six different tests and to adjust them to each other, as Schneider has done, for the purpose of making an index, is perhaps more ambitious than some of us care to essay. The much exploited imbalance of the endocrins is little greater than the imbalance of circulation elements when an endeavor is made to harmonize their various records.

To bring the subject up to date and to reestablish a balance against the preponderance of heart rate elements in the Schneider test, one might add as a seventh item the Barringer test; eighth, the action of the diastolic on standing; ninth, the phenomenon of delayed gravity resistance failure reported by Sewall. But perhaps we should not try to assemble the results of various tests in one index. Possibly it would be helpful to the clinician more completely to define the significance of each component.

Schneider and his associates have done a real service in calling to the attention of the medical profession ways in which they may find out more about a case than they ever could by the usual instrumental means alone. The recent report of Brush (*Med. Rec.*, Feb. 17, 1921) emphasizes the fact that there are tremendous variations in the efficiency of the circulation of cardiac cases; and further, the more important fact, that the efficiency of the circulation can be tremendously increased despite the crippled condition of the heart valves. Modern medicine is dealing more with men and women and less exclusively with their lesions. Schneider and Scott have helped this advance.

Let more use be made of tests of the circulation and let us have more new tests.

C. WARD CRAMPTON, M.D., New York.

DR. WILSON PROTESTS PREMATURE ANNOUNCEMENT OF DEATH

To the Editor:—In THE JOURNAL of April 2, the following notice was published:

> **Horace Plummer Wilson,** Whittier, Calif.; Chicago Medical College, 1896; aged 49; captain, M. C., U. S. Army, and discharged, June 20, 1919; died, March 4.

Relative to this report of my demise, I would like to say, that I see no special reason for being in such a hurry over this little trivial incident in my experience, and that since my pseudo-passing on March 4 as stated, I have been enjoying the wonderful climate of this most wonderful country, the various forms of amusement afforded, and find my present status not incompatible with a daily plunge in the municipal swimming pool.

Really, gentlemen, it isn't half bad and I am very glad to be able to assure you that all the misgivings and consternation that haunt your pillow, nightly, in anticipation of this little affair in your lives, are entirely unnecessary. In fact, I am having a most delightful time and can state, as has been said by another individual who found himself in the same very strange and embarrassing situation, that "the reports of my death" have been very much exaggerated. I am very sorry to dissipate the fond dream of some of my confreres by assuring them that it is absolutely bone dry in the place wherein I find myself. Being in the land of flowers, the floral contributions have been all that could be desired.

The letters of condolence that are coming from my personal friends in various states are a source of great comfort and support to my family in this hour of their great affliction.

HORACE PLUMMER WILSON, M.D., Whittier, Calif.

[COMMENT.—We apologize for demising Dr. Wilson in this routine manner. We find that our information was received from the *California State Journal of Medicine*, which we have always found dependable. We are glad that Dr. Wilson takes this premature demise so philosophically—no doubt due to the salubrious climate in which he now resides. The last man to be thus prematurely removed from our midst by THE JOURNAL threatened everything, including legal redress.—ED.]

TREATMENT OF LEPROSY WITH THE DEAN DERIVATIVES OF CHAULMOOGRA OIL

To the Editor:—On Nov. 27, 1920, THE JOURNAL published my paper on "Treatment of Leprosy with the Dean Derivatives of Chaulmoogra Oil: Apparent Cure in Seventy-Eight Cases." As supplementary to that report I wish to add that during the present month, after an examination by a committee of physicians representing the Territorial Board of Health, sixty-four additional patients have been released from Kalihi (Leprosy) Hospital on parole as no longer a menace to the public health, and one hundred and forty-two patients have been paroled since Oct. 1, 1918, not one of whom thus far has suffered a relapse.

J. T. MCDONALD, M.D., Honolulu.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

POLYURIA IN DIABETES MELLITUS

To the Editor:—Please give suggestions concerning the cause of an increasing polyuria in a case of diabetes mellitus. The patient has been under observation for three months, and during that time the twenty-four hour quantity of urine has increased from 8 to 12 pints. The patient has a low carbohydrate tolerance, a high blood sugar percentage, a blood pressure not increased, no albumin or casts in urine, and a normal phenolsulphonephthalein kidney excretion in two hours.

G. A. Chickering, M.D., Hutchinson, Kan.

Answer.—The phenomenon of increased diuresis in diabetes is commonly identical with that which is produced by intravenous injections of glucose at such rates that there is a heavy excretion of glucose in the urine. Like all other sugars and salts, glucose has a strong affinity for water. Glucose held in the mouth causes an accumulation of water in the mouth. When injected into the bowel in strong solutions, it causes a watery movement, and when it passes from the blood through the kidney, it carries water along with it. Other things being equal, the polyuria of a case of diabetes is usually more or less parallel to the total quantity of sugar that is excreted in a given time. Increasing diuresis usually means increasing excretion of sugar.

However, diabetic patients are very much like normal individuals in respect to the action of other diuretic substances. A diabetic might have a polyuria due to a complication in the nature of diabetes insipidus, pyelitis, the use of too much salt, and so on. The proof of the pudding would lie in putting the patient on diabetic management and making him free of glycosuria. The probabilities are that the hyperdiuresis will disappear when the diabetes itself is controlled. There is no very good reason for allowing an ordinary patient with diabetes to pass sugar constantly in the urine. The possibility that the patient is surreptitiously taking a nostrum for diabetes should not be lost sight of. Most of these nostrums contain diuretics which by further stimulating the already irritated kidneys produce a larger excretion of urine, although without any diminution in the amount of sugar. The greater dilution of the glucose excreted, however, frequently leads those patients who roughly estimate the amount of sugar excretion by means of a urinometer to believe that the nostrum is "curing" their condition.

BOWEN'S DISEASE

To the Editor:—Please furnish me information on the so-called Bowen's Disease, its etiology, diagnosis, bacteriology and roentgen-ray treatment. This disease seems to owe its name to Dr. Bowen of Harvard University.

E. Pascual Gispert, M.D., Colon, Cuba.

Answer.—In 1921, Bowen reported two cases of precancerous dermatosis—an atypical epithelial proliferation characterized by the development of pinkish papules covered with a thick horny layer which tend to form rounded nodular lesions. In some instances the little tumors remain discrete; in others, they tend to become grouped or confluent. Histologically the lesions, in some respects, resemble those of Paget's disease. Sutton regards the condition as being the same as dyskératose lenticulaire et en plaques of Darier. Excision or complete destruction of the lesions appears to be the only successful method of treatment.

ALIMENTARY ANAPHYLAXIS

To the Editor:—Please tell me in what number of The Journal the article by P. Pagniez on his work in prophylaxis of migraine was summarized. Any additional sources of information on that subject will be greatly appreciated.

V. W. Dutton, M.D., Utica, N. Y.

Answer.—No doubt the article referred to is that which appeared in the *Annales de médecine*, Paris, October, 1920. This article described the experiences of Pagniez and Vallery-Ridot with the preliminary ingestion of peptone to ward off alimentary anaphylaxis. The symptoms of such anaphylaxis were described, as transient edema, urticaria, migraine or asthma. A small amount of the harmful food may be taken an hour before the meal, or a tablet of 0.4 or 0.5 gm. of peptone, which the authors say seems to be polyvalent for most of the food substances inducing the disturbances. The summary appeared in The Journal, Feb. 19, 1921, page 551.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Arkansas: Little Rock, May 10. Sec., Reg. Bd., Dr. T. J. Stout, Brinkley. Sec., Eclectic Bd., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith.

Kentucky: Louisville, May 10. Sec., Dr. A. T. McCormack, Sixth and Main Sts., Louisville.

Louisiana: New Orleans, May 3. Sec., Dr. F. H. Hardenstein, 702 Macheca Bldg., New Orleans.

Nevada: Carson City, May 2. Sec., Dr. S. L. Lee, Carson City.

New York: Albany, Buffalo, New York and Syracuse, May 23-26. Asst., Professional Examinations, Mr. Herbert J. Hamilton, State Education Bldg., Albany.

Texas Reciprocity Report

Dr. T. J. Crowe, secretary, Texas State Board of Medical Examiners, reports that 192 candidates, including 26 osteopaths and 2 undergraduates, were granted physician's and surgeon's certificates by reciprocity from Jan. 1, 1920, to Jan. 1, 1921. Four candidates were licensed on Navy and Army Credentials. Seven candidates received verification licenses. The following colleges were represented:

College	Licensed by Reciprocity	Year Grad.	Reciprocity with
University of Alabama		(1912)	Alabama
College of Physicians and Surgeons, Little Rock		(1911)	Oklahoma
University of Arkansas	(1903), (1913, 2)	(1918)	Arkansas
University of Colorado		(1913)	Colorado
George Washington University		(1912)	Dist. Colum.
Atlanta College of Physicians and Surgeons	(1903), (1913)		Georgia
Atlanta Medical College	(1895), (1916), (1917, 2)		Georgia
University of Georgia		(1919)	Georgia
Bennett Medical College		(1914)	Illinois
Coll. of Phys. and Surgs., Chicago	(1903) Illinois, (1904)		Oklahoma
Hahnemann Med. Coll. and Hosp. of Chicago	(1893) (1906) Illinois		Illinois
Illinois Medical College		(1910)	Illinois
Loyola University	(1916) Illinois, (1916), (1917)		Missouri
(1917) Illinois			
Northwestern University		(1907), (1920)	Illinois
Rush Medical College	(1890) Indiana, (1898) (1916) California, (1919) National Board of Medical Examiners.		Michigan,
University of Illinois		(1916)	Illinois
Indiana University		(1908), (1909)	Indiana
Medical College of Indiana		(1900)	Indiana
College of Physicians and Surgeons, Keokuk		(1885), (1887)	Missouri
Iowa College of Physicians and Surgeons		(1898)	Iowa
Keokuk Medical College		(1891)	Iowa
State University of Iowa Coll. of Homeopathic Med.		(1899)	Iowa
University of Kansas		(1906, 2)	Kansas
Hospital College of Medicine, Louisville		(1906, 2)	Kentucky
Kentucky University Med. Dept., Louisville (1903) Missouri		(1903)	Kansas
University of Louisville	(1892) Oklahoma, (1902) (1903) Mississippi, (1907) Alabama, (1907) Kansas, (1914), (1920) Kentucky		Kentucky
Flint Medical College		(1908)	Louisiana
Tulane University	(1899), (1905), (1912), (1916), (1918), (1919, 6)		Louisiana
Baltimore Medical College		(1906)	Maryland
College of Physicians and Surgeons, Baltimore		(1905)	W. Virginia
Johns Hopkins University		(1917)	Dist. Colum.
Maryland Medical College, Baltimore		(1906)	W. Virginia
Harvard University		(1917), (1918)	Mass.
University of Michigan Medical School (1903) Minnesota (1904) Kansas (1917) Michigan		(1892)	Ohio
University of Minnesota Medical School		(1894)	Dist. Colum.
Barnes Medical College		(1902) Illinois, (1903)	Missouri
Eclectic Medical University, Kansas City, Mo.		(1906), (1910), (1912), (1914)	Arkansas
Ensworth Medical College		(1904) Kansas, (1904)	Oklahoma
Homeopathic Medical College of Missouri		(1902)	Kansas
Kansas City University of Physicians and Surgeons		(1919)	Nevada
Kansas City College of Medicine and Surgery		(1917, 2), (1918, 5), (1919, 6)	Arkansas
Marion-Sims College of Medicine		(1898) Missouri, (1899)	Illinois
National University of Arts and Sciences		(1918)	Missouri
St. Louis College of Physicians and Surgeons (1918) Missouri		(1918)	Nevada
St. Louis University School of Medicine		(1914), (1916)	Missouri
Univ. Med. Coll. of Kansas City, Mo.		(1903) Kansas, (1913)	Missouri
Lincoln Medical College		(1897)	Nebraska
Cornell University		(1900)	New Jersey
Long Island College Hospital		(1910)	New York
Syracuse University		(1910)	S. Dakota
University of Buffalo		(1905), (1917)	New York
Leonard Medical School		(1906)	Georgia
Homeopathic Hospital College, Cleveland		(1883)	Ohio
Laurel Memorial Woman's Med. College, Cincinnati		(1901)	Kentucky
Medical College of Ohio		(1894)	Nebraska

Western Reserve University	(1909)	Ohio
Hahnemann Med. Coll. and Hosp. of Philadelphia	(1907)	Penna.
Temple University	(1917)	Penna.
University of Pennsylvania	(1906) New Jersey, (1911) (1914) South Carolina, (1919) Pennsylvania	Virginia
Chattanooga Medical College	(1904) Oklahoma, (1906)	Tennessee
Meharry Medical College	(1918)	Tennessee
Memphis Hospital Med. Coll.	(1895, 2) Arkansas, (1897) (1903) Arkansas, (1911) Mississippi	Louisiana
University of Nashville	(1903) Arkansas, (1905)	Alabama
Universities of Nashville and Louisville	(1910)	Tennessee
University of Tennessee	(1891) Arkansas, (1892) (1897), (1913), (1914), (1916), (1917), (1919) Tennessee, (1919) Arkansas	Kentucky
Vanderbilt University	(1893), (1900), (1910), (1916), (1917), (1918), (1919)	Tennessee
Fort Worth School of Medicine	(1907)	Oklahoma
University of Texas	(1920)	Kansas
University of Vermont	(1884)	Vermont
Medical College of Virginia	(1898) Michigan, (1917)	Virginia
University of Toronto	(1907)	Georgia
Western University	(1909)	Illinois
Bohemian University of Prague	(1883)†	Germany
Two undergraduates		Arkansas

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
St. Louis College of Physicians and Surgeons		(1918)	U. S. Army
Vanderbilt University		(1913)	U. S. Army
University of Texas		(1917, 2)	U. S. Navy

* License not verified.
† Graduation not verified.

Social Medicine and Medical Economics

ESSENTIAL FACTORS FOR GROUP SUCCESS

L. W. MORSMAN, M.D.
HIBBING, MINN.

It is now admitted that modern medicine is so great in scope that no human mind can be adequately trained to cover the entire field with success: hence the specialist. Now there are recognized fifteen distinct specialties, and in some cities there are private practitioners limiting their work to further subdivisions of these fifteen specialties. Few will deny that this is of a distinct advantage and in line with progressive thought and modern development. From this situation has arisen one great difficulty: expense to the patient. To overcome this difficulty, there became associated groups of specialists, working together, and thus the clinic or group medicine was born. This is not to be regretted, for it is only a farther step in the ever upward progress of scientific endeavor. It is not my intention here to take up the manifest advantages, such as closer cooperation, exact diagnosis and encouragement to study, which have been recently and ably set forth,[1] but rather to discuss such factors as are necessary to promote this better method of medical practice and to analyze other factors that have in the last few years rendered attempts at group practice a failure.

Group practice has perhaps been more enthusiastically taken up and developed in the state of Minnesota than elsewhere. Many private practitioners, both general and special, are complaining that once they send a patient to such an organization, this patient is likely to be lost to them; that certain groups do not refer cases back with detailed report and, in many instances, do not refer them back at all; and again, others complain that as soon as a group is under way and apparently making progress, it has a tendency to assume superiority over the general practitioner and does not give him proper recognition.

REQUIREMENTS OF PERSONNEL

In discussing the requirements for success of a group, the personnel should be considered. First, preliminary educational requirements should be a minimum of high school diploma and a combined university and medical course, as now prescribed by most states, leading to the degrees of bachelor of science and doctor of medicine, this to include not less than twelve months' internship in a general hospital. To the group that wishes to be most successful, chiefs of departments should be selected who have had broad experience in the general practice of medicine. The time spent in general practice would depend somewhat on the specialty of the individual, and should be the greatest number of years for the individual who intends to be an internist. A minimum of five years of general practice should be required. This is of the greatest advantage, for during that time the young man has an opportunity for the study of human nature and living conditions that cannot be obtained elsewhere.

Then comes special study The time necessarily spent in the different specialties may vary. However, it is now generally admitted by the leaders in the profession that no man can cover a specialty so that he may be referred to as having a special knowledge of the subject in less than a minimum period of two years, these two years to be spent in the best postgraduate work obtainable.

It is to be hoped that there will be soon a national examining board for each of the distinct specialties, as there is now the national board of ophthalmic examiners, before whom one may voluntarily go and be examined, and if qualified, receive a certificate of special knowledge of ophthalmology that can be accepted by the profession in general. The personal requirements of a member of a group must be those required to obtain a certificate to practice medicine, but in addition he must be a person that can work in harmony with others, a man who is broad enough to admit and respect a superior authority, and one whose chief ambition is to do constantly better work.

ORGANIZATION

In the organization of a group to practice scientific medicine, the size of the group will depend on the community needs. In a community of 100,000 or more, an ideal basis of subdivision would be that of the following specialties: (1) internal medicine; (2) surgery, general and abdominal; (3) obstetrics; (4) gynecology; (5) ophthalmology; (6) otolaryngology; (7) diseases of children; (8) pathology; (9) nervous and mental diseases; (10) dermatology; (11) syphilology; (12) orthopedic surgery; (13) stomatology; (14) gastro-enterology and proctology; (15) dentistry.

For a small community of 5,000, a division of the work among five specially prepared men would be most practical. Let me predict that before a great length of time every county seat town, especially in the more populous states, that has a population of 5,000 or more will have its group and with it a small associated hospital, so that expert service may be given to our entire population without a trip of any great distance from home and with the expenditure only of a reasonable fee. The five specialists for the small group mentioned would be: (1) internist; (2) ophthalmologist and otolaryngologist; (3) general surgeon; (4) orthopedist; (5) pathologist. Necessarily, then, the department of internal medicine would cover nervous and mental diseases, dermatology and syphilology as well. The eye, ear, nose and throat department would also cover stomatology, with perhaps a subdivision of dentistry. The surgeon would cover gynecology, gastro-enterology and proctology, and orthopedic surgery as well as general and abdominal surgery. The orthopedist would cover the closely associated obstetrics. The pathologist would carry out all laboratory work, roentgen-ray diagnosis, bacteriology, blood chemistry, radium treatment and allied subjects. Such a group would have an associated dentist or, depending on conditions, work in conjunction with the two or three dentists already established in the community.

1. Leonard, V. N.: Significance of Group Practice in Its Relation to the Profession and to the Community, J. A. M. A. 76: 421 (Feb. 12) 1921.

Financial compensation would be in proportion to the scientific endeavor and qualifications of the individual specialist and to the amount of work, time and hours done by him. This absolutely eliminates the common fee or equalization of fees clinic. This has been, of all things, the greatest factor of internal dissension in group practice. In other words, group practice can succeed, particularly in small groups, in smaller communities, only by a group of specialists who are conducting private practice. If, by diligence and extra endeavor, one of the group receives more direct or referred business and his department becomes larger, he should still be the head of this department, and such assistance as necessary should be hired by him. If, however, his patients become so numerous that it is impossible for him to give them personal and detailed attention, then that department is ready for a subdivision. No assistant in any group, large or small, should have or be allowed the exclusive handling of a case. When it becomes necessary to subdivide a department, as, for instance, adding a department of orthopedic surgery, then such an orthopedist, who has not less than the minimum qualifications mentioned, should be invited to join this group; and, barring his pro rata of the overhead expense, he should have for himself all fees paid for his services.

There must be a centralization of authority, the lack of which has been perhaps the second most common cause of failure of group practice. No business, no organization, regardless of what its endeavors may be, can exist without the members submitting themselves to such authority. In the large cooperative group, where it is owned by individuals, a governing board should be appointed which, in turn, controls a business manager. In small cooperative groups the personnel to succeed in harmony must be such that they are willing to submit gracefully to majority rule.

The golden rule must ever be the standard of a cooperative group in its dealings with the profession at large. The absence of such application of the golden rule has been the largest factor in creating unfavorable impressions on the general practitioner of medicine. The result of such impressions was well protrayed in a recent communication to THE JOURNAL.[2]

A cooperative group should, by its actions and deeds, let the professional members of the community know that it considers the family physician the chief in a consultation diagnosis. The case histories should be made up so that the family physician's name and address and whether the patient was referred or not should appear on the first page of the patient's history. A detailed report of the examination, as well as diagnosis and recommendations, should be typewritten and sent to the family physician. When the patient is accompanied by a letter, the family physician's instructions should be carried out, and whether a patient comes direct, or at the recommendation of a nonprofessional friend, if the patient claims a family physician, it would be only professional courtesy for the specialist or specialists of the group to report their findings, that the general practitioner might have the benefit of such knowledge in future care of the family.

THE GENERAL PRACTITIONER—A SPECIALIST

And now, a word as to the general practitioner. He is not losing his own. He will always be filling an important mission in the medical field, and such men who, after, let us say, a five year period have become successful general practitioners and wish to continue their endeavors in that field will, as they have in the past, become specialists through study and application on those particular diseases with which they are daily coming in contact. And the young man who is doing limited work should be led to realize that the sum total of the knowledge and skill possessed by these specialists in general practice is far superior to his.

CHIEF FACTORS FOR GROUP SUCCESS

1. Group practice must be conducted on a cooperative basis.
2. The personnel of the group must be carefully selected as to its professional and personal qualifications.
3. There must be a centralized authority.
4. Specialists should practice as in private practice, but should group themselves together with the advantage of the patient in mind.
5. The organization must be in keeping with the community needs.
6. The golden rule must be the applied ideal in its relation to both the public and the profession.

203 Congdon Building.

2. Reilly, F. S.: The Doctor's Defense, J. A. M. A. 76: 607 (Feb. 26) 1921.

Miscellany

GLAND TRANSPLANTATION IN SOUTH AFRICA

The wide publicity given to the ideas of Voronoff by newspapers throughout the world has led to the performing in Pietersburg, Transvaal, South Africa, of the operation he suggested. A description of the operation in the *Cape Times* published at Cape Town is sufficiently bizarre to merit special notice.

An elderly farmer, named Ben Knott, who had convinced himself of the efficiency of Voronoff's method decided to submit himself to the operation. His faith in the operation appears to have been influenced by an article which appeared in the *Star* describing Voronoff's work. Mr. Knott is a man of fine physique and had been blessed throughout life with excellent health, but he "found his vitality" appreciably diminishing or to quote his own words "he did not feel as he used" and therefore decided to be inoculated with the interstitial gland of a monkey. Several times he consulted his medical adviser in Pietersburg, Dr. Clarence Andrew, who at first regarded the idea as somewhat of a joke, but finally Mr. Knott presented himself at the office of Dr. Andrew accompanied by a large male baboon. "Having assured himself that the patient was quite serious and that the monkey was free from disease," says the *Cape Times*, "the doctor consented to perform the operation at the local hospital, whither Knott proceeded with the ape. When he presented himself at the institution quite a sensation followed. Staff nurses fled in all directions out of sight of the baboon, but Knott calmly remained by his charge and they were eventually conducted to the operating theater. Here also there was a panic when it was decided that the gland should be removed from the monkey without its being killed. Some half dozen hefty natives being requisitioned to tie the monkey up, the animal menacingly gnashed its teeth and assumed an undoubtedly hostile attitude." . . . "Ultimately, in order that the operation might be conducted under ideal conditions, it was deemed advisable to terminate the ape's existence. . . ." The patient being anesthetized the doctor, assisted by three nurses, proceeded with the surgical work. The monkey's glands were speedily removed, and as equally quickly they were grafted into the tissues of the abdomen. It is stated that Knott reacted to the introduction of a foreign body for a few days. Then his temperature and pulse becoming normal on the sixth day following the operation, he declined to remain in the hospital any longer declaring he was in excellent health. Knott, who is of English descent, is a married man with a wife and family, and claims that as a result of the operation there has been a great improvement in his constitution. This, he asserts, is due to the implantation of the monkey's gland and further claims that there has been a vast improvement in his sight, as he can now read newsprint, which he could not do heretofore without the aid of glasses.

The report appeared within a short time after the operation and ultimate results are awaited.

Book Notices

FRENCH-ENGLISH MEDICAL DICTIONARY. By Alfred Gordon, A.M., M.D., Neurologist to Mount Sinai Hospital. Cloth. Price, $3.50 net. Pp. 161. Philadelphia: P. Blakiston's Son & Co., 1921.

French literature is not studied in this country as much as its importance justifies. Therefore, a medical French-English dictionary is exceedingly welcome. We regret, however, the presence in this book of many defects which are certainly serious in a work on which one depends for accuracy. Unnecessary space has been consumed in giving at length definitions that are supposedly familiar to any medical reader. Random illustrations to the point are abasia, Addison's disease, neoplasia, prodrome and sassafras. Many other words have not been translated but defined, not always accurately. Take, for example, *abstême* (abstinent, teetotaler) *autolyse*, *épulie*, *gingivite*, *neosalvarsan*, *saprophyte*, *serre-fine*, *strongle* (mispelled, by the way), *des bronches* (strongylus apri), *veille* (wakefulness), *rmegma*, *yaws* (frambesia), a word not so French, either. In still other cases the word that best expresses the English meaning has been left out, as in *abaissement* (sagging, ptosis), *accélération* (rapidity, quickening), *acinus* (acinus), *adipocire* (adipocere), *pelade* (pelade or alopecia areata), *mal d'oreilles* (earache), *nictation* (nictitation), *procidence* (procidentia), *régles* (period). Some words are misplaced. There is no good reason for capitalizing words which are not proper nouns. Another questionable innovation is the introduction of the names of some authors, such as Avelis, Bichat, Pasteur, especially when others of equal prominence are left out, such as Charcot, Fournier, Laënnec. The key to the pronunciation is somewhat complicated and not very clear or exact. The pronunciation of "e" is said to be like that of "e" in the word never; of "i," like that of English "e," and farther on like "ea" in "teamster"; and of "u" like the English "u." The book is well printed, on good paper, and should prove useful, as it fills a long felt need.

TICE'S PRACTICE OF MEDICINE. In ten volumes; Volumes 1, 2, 3, 4, 9, 10. Editor-in-Chief, Frederick Tice; Advisory Editor in Medicine, Luther F. Warren; Advisory Editor in Neurology, Julius Grinker. Price, $115. Pp. 7,000, with illustrations. Hagerstown, Md.: W. F. Prior Company, Inc.

One thing that strikes the reader of this system is the large number of new names in the list of contributors. Some of the names are entirely unknown to us. This absence of the better known writers, however, does not by any means imply that the articles are of inferior quality. On the contrary, many of them show a care in their composition that is sometimes lacking from the article of the writer who pauses just long enough from his arduous duties as professor, practitioner or research worker, to recast hurriedly some of his old ideas that he has more than once expressed in different books and periodicals. It is a good thing once in a while to have the fresh young blood of the assistant professor or the instructor injected into such a collection of monographs as this.

We have heard of the physician who, as Ziemssen's "Encyclopedia of Medicine" was published, read each volume as it appeared. We have not done that with Tice's system either for our own edification or for the purpose of reviewing the several articles in detail. We have read some articles in their entirety, others partially, and have at least glanced at all. As a result of this perusal we may say that we regard these volumes as a whole as creditable and well worth while. Naturally the articles are of unequal merit; that is the inevitable character of multiple authorship. But the average is good. Certain articles are practical and condensed, with unnecessary details cut out. Such are Stitt's article on malta fever, and Mosenthal's on diabetes. Others are long and encyclopedic, as those of Max Kahn on functional diagnosis. One may wonder why he devotes twelve pages to the virtually discarded subject of cryoscopy of the urine; yet it has a certain value, historical value at least, in a work that is intended to be a work of reference.

There is an evident attempt to make the system of value to the general practitioner. This is seen especially in the emphasis placed on treatment. This is in many of the articles very full indeed, in fact, too full of drugs, serums and vaccines to be to our personal liking. But suggestions as to what to do are what the physician wants, and he will find such suggestions here, with the drugs and other remedial agents pointed out in boldface type. Where treatment by drugs is of supreme importance and where the manner of giving the drug is a matter of great moment, minute details are essential. We cite as especially praiseworthy in this respect the discussion by Lespinasse of the treatment of syphilis. Details are full enough to enable the general practitioner to give safely and efficiently mercury by mouth, by inunction, or by the hypodermic route, or to give arsphenamin.

Of interest is the history of medicine covering about 100 pages of Volume I. Also there is an unusually well-written article by Byfield on case history taking. There are helpful bibliographies to all the articles. There are, so far as we have observed, no outstanding monographs that bid fair to become classic, as did some of those in Nothnagel's system. There is too much of an effort to make the book a ready reference book for the practitioner, and there is too much of a necessity of fitting the article into a rather cramped space. But the average is good and the volumes fulfil their purpose. The loose-leaf feature, as seen in Tice's system and in others that are now being published, is to be given a trial. Whether it will be regarded as a success will be determined in the future. We have grave doubts whether the special features of this system will survive more than a very few years. These features are new pages of new material issued periodically for insertion in the volumes, the monthly medical digest, a medical research service, and a complete desk index.

MENTAL DISORDERS BRIEFLY DESCRIBED AND CLASSIFIED WITH A FEW REMARKS ON TREATMENT AND PREVENTION. By Charles B. Thompson, M.D., Medical Director of the Mental Hygiene Society of Maryland. Paper. Price, 75 cents. Pp. 48. Baltimore: Warwick & York, 1920.

This syllabus is recommended especially to teachers who want a short summary of the various types of mental disorders about which to group their lectures. The first part, concerned with the mental disorders with definite injury to brain tissue, enumerates the various states in which mental disorders frequently occur, and gives a short description of the form of the disorder to be expected. No attempt at analysis of the genesis of these disorders is attempted. The second part, on mental disorders explicable in psychologic terms, begins with a short introduction calculated to lead the reader away from the mystical, inexplicable conception of instanity. Manic-depressive, atypical depressions and excitements, paranoia and the simple, hebephrenic, catatonic and paranoid forms of dementia praecox are briefly described. There is a short discussion of the causes of dementia praecox from the standpoint of the psychogenists. The neuroses are also discussed from the same point of view, though the author begins this discussion with the statement that "these states are quite different from any of the foregoing" (the psychoses). Treatment, including prevention, is covered in less than four pages. The author recommends laying the matter before the patient as completely as possible so as to allow of an improvement in adjustment wherever possible. There is no attempt made at a thorough presentation of the arguments of the psychogenetic school; the statements that are made are already worded and easily understood.

TRATADO PRÁCTICO DE RADIOLOGÍA. Por el Dr. Carlos Heuser. Paper. Pp. 498, with 265 illustrations. Buenos Aires: La Semana Médica.

The author has endeavored to set down as specifically as possible every technical detail. The first chapter, for instance, comprises a set of simple rules, illustrated with fifty-eight photographs, taking up successively the roentgenography of the various parts of the body. Other chapters are devoted to laboratory equipment, technic, procedure, interpretation of roentgenograms, etc. The last chapter describes Dr. Heuser's own apparatus for the localization of foreign bodies. This book, by the most prominent Argentine roentgenologist, serves well its purpose, containing numerous helpful hints by a man who knows every angle of his subject. The list of references seems to have been carelessly prepared, and the literary style of the book might be improved to advantage.

Medicolegal

When Entitled to Medical and Hospital Aid

(Chicago-Sandoval Coal Co. v. Industrial Commission et al. (Ill.), 128 N. E. R. 567)

The Supreme Court of Illinois says that, Sept. 10, 1918, an employee of the coal company received an injury as the result of a strain while attempting to lift a coal car that had left the track. He continued to work at his usual employment, however, until January, 1919, when it became necessary for him to go to a hospital and submit to an operation. The company contended that it was not liable for the medical, surgical and hospital services because none were rendered or requested within eight weeks from the date of the injury. The workmen's compensation act of Illinois provides that the employer shall provide necessary first aid and medical, surgical and hospital services; also medical, surgical and hospital services for a period not longer than eight weeks, not to exceed the amount of $200; but the employee may elect to secure his own physician, surgeon or hospital services at his own expense. It is evident from these provisions that the legislature did not intend that the eight weeks should necessarily be confined to the time immediately following the injury. Nor could such construction be reasonably put on the statute, as it frequently occurs, as in this case, that the results of the injury do not develop to such an extent as to require medical, surgical or hospital services for a considerable period of time after the injury is received; and to hold that such services are to be supplied only within the first eight weeks following the injury would, in many instances, limit such services to but a part of eight weeks, and in other cases prevent recovery for such services altogether. It is evident that the legislature intended that the medical, surgical and hospital services for which the employer is liable must be necessitated by the injury, but that such liability is not limited to the eight weeks immediately following the injury, where the necessity for such services does not arise immediately following the injury. But the applicant should show knowledge on the part of the employer of facts from which the latter might reasonably be presumed to know or believe that such services were necessary; or he should show a request therefore on his part. The industrial commission did not err in awarding, in this case, $200 for medical, surgical and hospital services.

City Not Liable for Wrongful Acts of Officers

(Franklin v. City of Seattle (Wash.), 192 Pac. R. 1015)

The Supreme Court of Washington, in affirming a judgment dismissing the plaintiff's action for damages, holds that the defendant city was not liable for the alleged wrongful arrest, detention and treatment of the plaintiff. The court says that the complaint alleged that the defendant had created and maintained a board of health and a department of police; that those two departments conspired together to arrest certain persons accused by them of having some infectious or contagious disease; that it was a part of the conspiracy that, when the police had caused the arrest, the person so arrested would be placed in the city jail, and turned over to the board of health, which would make blood tests and give treatments for diseases which the person under arrest did not have, and under pretense of such treatment, and the necessity therefor, would keep such person in confinement in the board of health department of the jail for long periods. Continuing, the complaint alleged that police officers of the city unlawfully and maliciously entered the home of the plaintiff, and, without having any warrant therefor, arrested her and forcibly took her into custody and to the city jail, and there falsely and maliciously caused her to be charged with being a disorderly person, and set opposite her name the letters "B. T.," meaning "blood test"; that as a part of the conspiracy the health officer took charge of her, and forcibly took from her arm quantities of blood for the pretended purpose of making a blood test; that thereafter the health officer maliciously and falsely charged her with having an infectious and contagious disease, when, in fact, she had no such or other disease, of which fact the health officer had full knowledge; and that, without authority of law, the plaintiff was maliciously confined in jail, with other prisoners, for more than a year. In short, the charge was that the city police unlawfully and without cause arrested the plaintiff and put her in jail, and then turned her over to the city health officer, who made a blood test and falsely found that she had a certain disease, and kept her in jail for more than a year, and that all of this was done falsely, wrongfully and maliciously. The question was: Did these facts state a cause of action against the city? The court does not think that they did. The only direct connection that the city had with these transactions was that it created the board of health and appointed its officers, and created the police department and made appointments thereto and owned the jail. Every other thing was done by the health officers and the policemen. They, and they alone, were guilty, if any one was, of all the wrong, fraud, conspiracy and maliciousness charged in the complaint. Under these facts the city was only discharging a governmental duty cast on it by the state, and was not liable. The same immunity applies in the case of the quarantining of persons because the city in that instance is engaged in the duties of the state and acting for it. While the courts are not altogether in agreement as to where the line should be drawn, showing when a municipality is and when it is not in the performance of a purely governmental duty, the court's attention was not called to a single adjudicated case in which the facts were similar to those involved here, which did not hold as the court here decides; and it has no doubt that the trial court was right in dismissing the case.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, Boston, June 6-10.

Alabama, Medical Association of the State of, Montgomery, April 19-21.
American Association for Thoracic Surgery, Boston, June 6.
American Association of Anesthetists, Boston, June 6-8.
American Assn. of Genito-Urinary Surgeons, Richmond, Va., May 2-3.
American Association of Physicians, Atlantic City, May 10-11.
American Climatological and Clinical Association, Lenox, Mass., June 3-4.
American Dermatological Association, Swampscott, Mass., June 2-4.
American Gastro-Enterological Association, Boston, June 4.
American Gynecological Society, Swampscott, Mass., June 2-4.
American Laryngological Association, Atlantic City, May 30-June 1.
American Laryn., Rhinol. and Otol. Society, Atlantic City, June 3-4.
American Medico-Psychological Association, Boston, May 31-June 3.
American Orthopedic Association, Boston, June 2-6.
American Otological Society, Atlantic City, June 1-2.
American Pediatric Society, Swampscott, Mass., June 2-4.
American Proctologic Society, Boston, June 3-6.
American Society for Clinical Investigation, Atlantic City, May 9.
American Therapeutic Society, Washington, D. C., June 3-4.
American Urological Association, Montreal, June 2-4.
Arkansas Medical Society, Hot Springs, May 3-5.
Association for the Study of Internal Secretions, Boston, June 6.
Association of American Peroral Endoscopists, Atlantic City, June 1.
California, Medical Society of the State of, San Diego, May 10-12.
Conference of State and Provincial Health Authorities, Boston, June 3-4.
Connecticut State Medical Society, Hartford, May 18-19.
Florida Medical Association, Pensacola, May 10-11.
Georgia, Medical Association of, Rome, May 4.
Illinois State Medical Society, Springfield, May 17-19.
Interstate Association of Anesthetists, Niagara Falls, June 1-3.
Iowa State Medical Society, Des Moines, May 11-13.
Kansas Medical Society, Wichita, April 26-28.
Louisiana State Medical Society, New Orleans, April 19-21.
Maryland, Medical and Chirurgical Faculty of, Baltimore, April 26-28.
Massachusetts Medical Society, Boston, May 31-June 1.
Michigan State Medical Society, Bay City, May 24-26.
Mississippi State Medical Association, Laurel, May 10-11.
Missouri State Medical Association, St. Joseph, May 17-19.
Nebraska State Medical Association, Lincoln, May 9-12.
New Hampshire Medical Society, Concord, May 25-26.
New Mexico Medical Society, Albuquerque, April 28-30.
New York, Medical Society of the State of, Brooklyn, May 3.
North Carolina, Medical Society of the State of, Pinehurst, April 26-28.
North Dakota State Medical Association, Fargo, May 26-27.
Ohio State Medical Association, Columbus, May 3-5.
Oklahoma State Medical Association, MacAlester, May 17-19.
Radiological Society of North America, Boston, June 3-4.
Rhode Island Medical Society, Providence, June 2.
South Carolina Medical Association, Columbia, April 19-20.
South Dakota State Medical Association, Aberdeen, May 24-26.
Texas, State Medical Association of, Dallas, May 10-12.
Western Electro-Therapeutic Association, Kansas City, Mo., April 21-23.
West Virginia State Medical Association, Charleston, May 24-26.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Hygiene, Baltimore

March, 1921, 1, No. 2

*Experiments on Carriage of Intestinal Protozoa of Man by Flies. F. M. Root, Baltimore.—p. 131.
*Comparative Study of Hemolytic Streptococci from Milk and from Human Lesions. R. C. Salter, Baltimore.—p. 154.
Problem of Plague in United States. G. W. McCoy, Washington, D. C. —p. 182.
*Relation of Certain Carrier Conditions to Virulence of Hemolytic Streptococci. L. C. Havens, Baltimore and M. L. Taylor, Iowa City. —p. 192.
*Real Risk-Rate of Death to Mothers from Causes Connected with Childbirth. W. T. Howard, Jr., Baltimore.—p. 197.
*Bacterial Content of Telephones with Special Reference to Respiratory Pathogens. C. C. Saelhof, Chicago.—p. 234.
*Vitality and Viability of Hemolytic Streptococci in Water. G. S. Livingston, Chicago.—p. 239.

Intestinal Protozoa Carried by Flies.—The results of Root's observations emphasize the importance of flies as carriers of disease-producing organisms from human feces to human food, and second, because they define more exactly the limits of such carriage, in so far as the cysts of intestinal protozoa are concerned. Flies feeding on a human stool containing cysts or free forms of intestinal protozoa will take large numbers of them into their intestines and deposit them again in their own feces. Since all stages of the protozoa are killed within a few minutes by drying, such fly feces are only dangerous to human beings when deposited on moist or liquid foods. A fly which has once ingested fecal material containing protozoa may deposit feces of its own which contain the infective forms of the protozoa at any time, from a few minutes after feeding until the most resistant forms, the cysts, are dead. The experiments reported show that the time of survival varies for the cysts of different species of protozoa. If a fly containing cysts is drowned in water, milk, soup or other liquid food, the cysts will live still longer, about a week, and there seems to be a possibility that human beings might be infected by swallowing such drowned flies.

Hemolytic Streptococci in Milk.—Salter found that hemolytic streptococci which differ in many respects from human pathogenic streptococci occur quite generally in raw and pasteurized milk. A large number of these strains behaved alike in a series of tests, and, therefore, they seem to form a hemogeneous group or species. The most constant difference between the two groups is the failure of the milk strains to ferment saccharose. The milk hemolytic streptococci are not pathogenic for mice and virulence cannot be demonstrated even by successive passages. The difference in thermal death rates differentiates the milk and pathogenic strains. With a very large number present it is possible for pathogenic streptococci to survive pasteurization at 60 C. for thirty minutes. The number of survivors is undoubtedly very small, but they are able to produce a culture virulent for mice. Higher pasteurizing temperatures would give a better margin of safety. Successive heating of pathogenic streptococci does not result in the production of a heat resistant strain. Hemolytic streptococci resembling the pathogenic type in every respect were isolated from certified milk. They are of low heat resistance and could readily be destroyed by proper pasteurization.

Tonsillitis Patients Carriers of Hemolytic Streptococci.—It is shown by Havens and Taylor that a large percentage of patients with acute tonsillitis become chronic carriers of hemolytic streptococci, as evidenced by cultures of tonsils removed from three to six months following the acute attack.

Death Rate Among Mothers Due to Childbirth.—The average percentage of still to total births in the United States Birth Registration Area for 1918 was 3.44. In Kentucky, Maryland, North Carolina and Virginia it was 4.07. The highest percentage during the years 1915-1919 was in Baltimore, 6.05 for whites and 13.28 for negroes, an average of 7.44. During the same period the percentage in Stockholm was 2.16; in New York, 4.38; in Philadelphia, 4.39; in Boston, 3.60; in Birmingham, 3.24. In the birth registration area of the United States for 1918, the total rate was more than double that for England and Wales calculated on live births alone, and this, Howard claims, is due to the great excess in the United States rates for puerperal albuminuria, convulsions, septicemia and accidents of pregnancy and labor. The total rate in urban communities was considerably greater (10 per cent.) than that in rural communities.

Bacterial Content of Telephones.—Hemolytic streptococci were isolated by Saelhof in 15.9 per cent., the diphtheria bacillus in 2 per cent., and the pneumococcus in 1 per cent., from the transmitters and receivers of ninety-four telephones. Of eleven strains of hemolytic streptococci isolated 90.0 per cent. were virulent for rabbits. Saelhof urges that sterilization of telephones should be practiced to prevent the spread of virulent organisms. Cleansing with soap and warm water and subsequent sterilization in mercuric, chlorid, compound solution of cresol, etc., for a period of ten minutes, is recommended. In speaking, the mouth should not come in direct contact with the transmitter. The public should be taught how to use the telephone hygienically.

Viability of Hemolytic Streptococci in Water.—Livingston found that hemolytic streptococci, when placed in water, remain alive for a variable length of time, depending on their number, on the temperature, on the presence of other organisms, and on virulence. They are capable under special conditions, of retaining their vitality for a long time, but under natural conditions, if placed in water, they will succumb quite rapidly, especially if recently isolated.

American Journal of Medical Sciences, Philadelphia

March, 1921, 161, No. 3

*Importance of Recognizing and Treating Neurosyphilis in Early Period of Infection. J. A. Fordyce, New York.—p. 313.
*Effect on Blood Pressure and Nonprotein Nitrogen in Blood of Excessive Fluid Intake. J. L. Miller and J. L. Williams, Chicago.—p. 327.
Problems Concerning Urinary Calculi. E. L. Keyes, New York.—p. 334.
Experimental Studies in Diabetes: Series II. Internal Pancreatic Function in Relation to Body Mass and Metabolism. F. M. Allen, New York.—p. 350.
*Pulmonary Sequels of Influenza. M. Fishberg, New York.—p. 365.
Study of Case of Unexplained Low Carbon Dioxid Combining Power of Blood. L. Jonas and O. H. P. Pepper, Philadelphia.—p. 383.
*Empyema Thoracis: Analysis of Fifty-Six Cases. J. Wynn, Boston.—p. 387.
Experience with Certain Physical Efficiency and Low Oxygen Tests. E. C. Schneider, Middletown, Conn.—p. 395.
*Saccular Aneurysm of Descending Thoracic Aorta. E. S. DuBray, San Francisco.—p. 407.
Silver Salvarsan in Treatment of Syphilis. C. M. Watson, U. S. Army. —p. 418.

Treatment of Neurosyphilis.—A prolonged study of early cases of neurosyphilis as regards the therapeutic response of the fluid changes to treatment has convinced Fordyce that, on the one hand, are superficial types rapidly curable, and, on the other, deeper ones which yield only to prolonged treatment. In their therapeutic response and fluid formulas the latter are probably of the preparetic type which without treatment would eventually result in degenerative encephalitis. A definite and constructive plan for the prophylaxis of the degenerative stage of syphilis of the central nervous system and its treatment in the initial stages can only be devised by a study of the infection in its inception. Syphilis of the nervous system probably begins in the first year of the infection. Early neurosyphilis may manifest itself by obtrusive symptoms by slight objective signs or by asymptomatic. Treatment by the usual channels may control the obtrusive symptoms. It seldom cures the underlying infection. Symptoms, at times, develop during or shortly after intensive courses of arsphenamin and mercury. If not cured these early infections may persist and cause late neurosyphilis. No case of syphilis should be discharged without the knowledge gained by examination of the spinal fluid. In case no evidence of infection is found, a prognosis of probable future immunity may be made. If infection exists, it should be treated by methods shown by experience to be effective. Fordyce is convinced by an experience of seven years in the use intra-

spinal therapy that practically all cases of early neurosyphilis can be cured more rapidly, and in the majority of cases only cured by the combined intravenous and intraspinal method.

Effect of Excessive Fluid Intake on Blood Pressure.—Miller and Williams state that in patients with hypertension and presumably chronic interstitial nephritis, large amounts of fluids may cause a very decided increase in blood pressure. Whether this rise occurs depends on promptness with which the kidneys function in excreting water. In three cases studied the taking of large amounts of fluid daily for a period of six days was without effect on the urea nitrogen in the blood. In two of these three cases the uric acid in the blood was definitely lessened. This was probably due to the treatment as following its discontinuance there was an increase to the previous level.

Pulmonary Sequels of Influenza.—Fishberg emphasizes the fact that in many patients attacked by acute epidemic influenza certain sequels are left in the respiratory tract after the acute disease had run its course. A large number remain with subacute rhinopharyngitis some with general bronchitis, and now and then the residual lesion is a localized bronchitis. When the latter affects an upper lobe of the lung, it is very difficult to differentiate it from pulmonary tuberculosis. When these sequels are instrumental in keeping the patient weak and debilitated for weeks and months, which is often the case, this, in addition to the cough and expectoration, may lead to a diagnosis of pulmonary tuberculosis. More serious pulmonary lesions are bronchiectasis and lung abscess which have increased in frequency since the last pandemic of influenza. Bronchiectasis remains in cases in which influenza was complicated by pneumonia or pleurisy or both. The diagnosis is at times very difficult mainly because of the ancient notion that influenza is a strong predisposing factor to tuberculosis. When the lesion is found strictly localized in one of the lower lobes of the lungs, and this is the case in the majority tuberculosis should be excluded for this reason alone. In those in whom the lesion is in an upper lobe, only repeated sputum examination decided, though the fact that the disease began with influenza that emaciation is not pronounced, that fever is lacking, the pulse rate is normal, and that there is obtained clear resonance above the clavicle, etc, should be counted against tuberculosis. The more severe lesions in which pulmonary abscess remains after influenza, the diagnosis may be made along the same lines as in bronchietasis, and in addition note should be made of the fact that the sputum is abundant, at times fetid, the fever continuous or undulating, the pain in the chest and the physical signs, all of which combine to clear up the diagnosis. If several examinations of the sputum fail to disclose tubercle bacilli the diagnosis may be safely made. Leukocytosis, with an increased proportion of polymorphonuclear cells, has the same significance.

Empyema Thoracis.—In a series of fifty-six cases of empyema analyzed by Wynn, the mortality has been 7.1 per cent. Most cases followed pneumonia, though injury, pertussis, measles, etc., have also been antecedent conditions. Twenty per cent. had familial tuberculosis but a negligible percentage gave personal history of pulmonary predisposition. The treatment of acute cases in this series has been palliative aspiration until cicatrical exclusion of the general pleural cavity has made rib resection the operation of safety and choice. Sixty per cent. of these cases have had rib resections—usually the seventh or eighth in the midaxillary or posterior axillary or posterior axillary lines. The average postoperative hospital residence has been four and a half half weeks, the posterior axillary line cases leaving the hospital first. In chronic empyema the aim has been cavity obliteration by subperiosteal rib resection and at times parietal pleura extirpation. The mortality with this plan of treatment is 9 per cent. in eleven cases.

Aneurysm of Descending Thoracic Aorta.—A case of descending thoracic aneurysm is presented by DuBray which had ruptured directly into the left lower lobe and left pleural cavity. The physical signs were misleading and the clinical diagnosis was incorrect. A roentgen-ray study was not made. The literature on this subject is reviewed.

American Review of Tuberculosis, Baltimore

March, 1921, 5, No. 1

Roentgenographic Pathology of Pulmonary Tuberculosis. J. B. Amberson, Jr., Loomis, N. Y.—p. 1.
*Absorption of Acacia from Pleural Cavity of Normal and Tuberculous Rabbits. H. J. Corper and O. B. Rensch, Denver.—p. 49.
*Tonsillar Route of Infection in Pulmonary Tuberculosis. J. G. Van Zwaluwenburg and G. P. Grabfield, Ann Arbor, Mich.—p. 57.
Consolidated Medical Report Covering Discharges from Thirteen Minnesota County Sanatoria. R. Bosworth, St. Paul.—p. 66.

Absorption from Pleural Cavity.—The absorption from the pleura in normal and tuberculous animals of some colloidal substance resembling in many particulars the proteins of pleural effusion was investigated by Corper and Rensch. There was found to be no difference in the absorption of 7 per cent. acacia in saline solution, without or containing a suspension of virulent human tubercle bacilli, after intrapleural injection in rabbits both normal or previously sensitized by the subcutaneous or intravenous injection of the same culture of virulent human tubercle bacilli. There is no evidence in these experiments to prove that in the rabbit tuberculous pleural effusions or empyemas were more prone to form in animals previously sensitized with the same culture of living virulent human tubercle bacilli than in those animals which did not receive a sensitizing injection. These and previously reported observations do not agree with those of Paterson concerning tuberculous pleural effusions in the rabbit.

Tonsil Route of Infection in Pulmonary Tuberculosis.—A shadow that Van Zwaluwenburg and Grabfield believe represents a thickening of the pleura over the apex of the lung is described and its relationship to tonsillar and cervical gland tuberculosis was studied. Such an apical pleuritis is seen in at least 10 per cent. of all roentgen-ray examinations of the chest coming to the university hospital laboratory. It occurs most frequently in cases showing tuberculous deposits in the faucial tonsils (93 per cent.). With the cervical gland tuberculosis this lesion is recognizable in 59 per cent. of all cases and probably occurs in a larger number, being obscured by the shadows of pulmonary tuberculosis, 71 per cent. in this group showing either this lesion or frank tuberculosis of the lung or both. Cases without tuberculosis of the tonsil show an apical pleuritis in only 11 per cent. of the cases. It is suggested that common route of infection may lie through the tonsil and cervical lymphatics to the apical pleural and thence into the lung. This hypothesis offers a singularly satisfactory explanation for the frequency of apical lesions, the predominance of right-sided lesions, of the pathogenesis of tuberculous pleurisy with effusion and other obscure feature of this infection.

Annals of Surgery, Philadelphia

March, 1921, 123, No. 3

Ligation of External Iliac Artery and Vein Above and Below a Communicating Bullet Wound of These Two Vessels. G. P. La Roque, Richmond, Va.—p. 265.
Cancer Infection. A. J. Ochsner, Chicago.—p. 294.
Carcinoma of Kidney. J. T. Pilcher, Brooklyn, N. Y.—p. 301.
Carcinoma of Pelvis of Kidney. A. McGlannan, Baltimore.—p. 310.
End Results of Operations for Bony Ankylosis of Jaw. W. P. Carr, Washington, D. C.—p. 314.
Laryngeal Function in Thyroid Cases. E. S. Judd, Rochester, Minn.—p. 321.
*Gastric and Duodenal Ulcers. C. H. Mayo, Rochester, Minn.—p. 328.
Subphrenic Pyopneumothorax; Subphrenic Abscess. R. Winslow, Baltimore.—p. 338.
*Technic of Hepaticoduodenostomy; Reconstructive Surgery of Biliary Ducts. D. C. Balfour, Rochester, Minn.—p. 343.
Analytical Study of Fifty Cases of Ureteral Stricture and Pyelitis. J. N. Baker, Montgomery, Ala.—p. 348.
*Exstrophy of Urinary Bladder with Carcinoma. W. E. Lower, Cleveland.—p. 354.
Operative Treatment of Gonorrheal Epididymitis. C. S. Vivian, Phoenix, Ariz.—p. 357.
Compression Fracture of First Lumbar Vertebra with Delayed Symptoms (Kuemmel's Disease). R. V. Gorsch, New York.—p. 360.
Roentgenographic Studies of Bronchiectasis and Lung Abscess after Direct Injection of Bismuth Mixture Through Bronchoscope. H. L. Lynah and W. H. Stewart, New York City.—p. 362.
Technic for Removal of Foreign Bodies Under Direct Fluoroscopic Guidance. L. W. Grove, Atlanta, Ga.—p. 372.

Gastric and Duodenal Ulcers.—In an investigation at the Mayo Clinic of the results of operation in a large series of cases of gastric and duodenal ulcers it was found that the average death rate for the four year period after operation in

patients with gastric ulcers was slightly more than three times the normal, while in patients with duodenal ulcers it was, if anything, less than normal. The series consisted of 2,431 patients and all but 108 were traced. Gastric ulcers may give greater discomfort than duodenal ulcers, and because of the danger of malignant degenerations, they should be destroyed at the time of the operation unless the procedure would add unwarranted immediate risk. While blocking the pylorus has been recommended in addition to gastro-enterostomy and practiced, Mayo says the procedure was unnecessary and is now obsolete. In the surgical treatment of ulcer there has been applied a well known principle of agriculture: an acid and continuously wet soil is tile drained and its surface limed. In fact, the surgical treatment of ulcer is the best recognition of the value of medical treatment in permanently overcoming delay or obstruction and lowering the acidity with the patient's own alkalies.

Hepaticoduodenostomy.—The technic described by Balfour provides a large opening in the duodenum and a mucomucous union for two thirds or at least one half the circumference of the hepatic duct stump. These provisions, together with the method of suturing the opening in the duodenum to the liver, allow for contraction and obviate the danger of secondary stricture, so that obstruction does not take place.

Exstrophy of Urinary Bladder and Carcinoma.—In Lower's case it is believed the carcinoma was caused by the wearing of a metal device invented by the patient for catching the urine.

Archives of Neurology and Psychiatry, Chicago

April, 1921; 5, No. 4

Description of Some Dissections of Internal Capsule, Corona Radiata and Thalamic Radiation to Temporal Lobe. S. W. Ranson, Chicago.—p. 361.
Anatomic Study of Inferior Longitudinal Fasciculus. L. E. Davis, Chicago.—p. 370.
Abnormal Mental States Encountered in a Detention Prison. M. Keschner, New York.—p. 382.
Tropical Neurasthenia, Tropical Hysteria and Some Special Tropical Hysteria-like Neuropsychoses. W. E. Musgrove, San Francisco.—p. 398.
Spinal Forms of Epidemic Encephalitis. H. A. Riley, New York.—p. 408.
Clinical Classification of Intracranial Tumors. P. Bailey, Boston.—p. 418.
Dandy Method of Localizing Brain Tumors by Roentgen Ray. K. A. Menninger, Topeka, Kan.—p. 438.

Arkansas Medical Society Journal, Little Rock

March, 1921, 17, No. 10

My Idea of Function of County Medical Society and Duties of Officers and Members. T. Cothern, Jonesboro.—p. 191.
Importance of Early Diagnosis and Treatment of Syphilis. O. C. Butler, England.—p. 193.

Boston Medical and Surgical Journal

March 24, 1921, 184, No. 12

When to Open Knee-Joints. H. W. Marshall, Boston.—p. 291.
Energy Requirements of Girls from 12 to 17 Years of Age. F. G. Benedict and M. F. Hendry, Boston.—p. 297.
Production of Agglutinins in Typhoid Fever. R. A. Kilduffe, Pittsburgh.—p. 306.
*Acute Empyema Complicated by Whooping Cough. W. R. Morrison, Boston.—p. 307.

Empyema Following Whooping Cough.—A little girl, 2 years and 5 months of age, developed empyema following lobar pneumonia, and while she was suffering from pertussis in the acute stage. More than 1 quart of pus and much detritus were evacuated under local anesthesia. The child made a perfect recovery.

California State Journal of Medicine, San Francisco

March, 1921, 19, No. 3

Success: As Applied to Urology. E. S. De Puy, Oakland.—p. 98.
Stiffness in Extremities Followed by Accident and Injury. A. L. Fisher, San Francisco.—p. 100.
Recent Developments in Radium Therapy. R. Duncan, Los Angeles.—p. 102.
Surgery of Chest. C. D. Lockwood, Pasadena.—p. 105.
Treatment of Suprapubic Prostatectomy Cases. H. A. Rosenkrans, Los Angeles.—p. 107.
Postmaturity of Fetus. N. H. Williams, Los Angeles.—p. 111.
Low Hemoglobin in Surgical Cases. W. H. Gilbert, Los Angeles.—p. 113.
Teeth, Tonsils and Sinuses. R. B. Sweet, Long Beach.—p. 116.
Climacteric Hypertension. R. Cummings, Los Angeles.—p. 116.

Colorado Medicine, Denver

March, 1921, 18, No. 3

*Pathology and Treatment of Chorea. G. A. Moleen, Denver.—p. 47.
Roentgenographic Studies in Asthmatic Bronchitis J. B. Crouch and F. A. Forney, Woodmen.—p. 50.
Unusual Complications and Sequels in Acute Infections of Childhood Following Influenza. J. W. Amesse, Denver.—p. 56.
Importance to Community of Provision for Feebleminded. C. L. Pershing, Denver.—p. 60.

Chorea.—Moleen points out that it is justifiable to conclude that chorea is the result of the general toxic blood state or of local action of a micro-organism in the cerebral cortex; and that this organism is closely allied to or an evolutionary development of the diplococcus or diplostreptococcus of rheumatic fever. The greatest liability or danger in the disease is in the involvement of the endocardium. Focal infections are to be seriously considered in all cases, but operative measures, especially on tonsils, should be deferred until the acute period of the attack has passed, as manipulation is likely to be followed by violent aggravation of all manifestations, including the implication of the serous membranes. The most effective treatment aside from the symptomatic is that which may be directed against the microbic infection, namely, salicylates, either by mouth or intravenously, increasing the dose until the physiologic effects are reached. Arsenic and hematinics are essential for the reestablishment of the constantly associated lowered blood values rather than as direct antagonists of the cause of the disease.

Georgia Medical Association Journal, Augusta

March, 1921, 9, No. 10

*Etiologic Relation of Worms to Epilepsy. E. B. Block, Atlanta.—p. 309.
Hypertrophic Stenosis of Pylorus. W. W. Battey, Augusta, Ga.—p. 315.
Pyelitis. A. J. Waring, Savannah, Ga.—p. 320.
Signs and Symptoms of Early Lobar Pneumonia. L. J. Johns, Tallapoosa, Ga.—p. 322.
Hyperthyroidism. M. F. Morris, Jr., Atlanta.—p. 325.
Tubal Pregnancy. W. F. Wells, Atlanta.—p. 330.
Utility of Influenzal Pneumonia Vaccine in Pregnancy and Postoperative Conditions. M. T. Benson, Atlanta.—p. 333.
Importance of Ureteral Stricture in Abdominal Diagnosis. G. Y. Massenburg, Macon.—p. 335.
Obstetrician's Obligation. G. W. Quillian, Atlanta.—p. 337.

Relation of Worms to Epilepsy.—Block feels justified in stating that there is reason to believe that epilepsy when produced by animal parasites may be due to the actual invasion of the brain by the larvae. The theory is, at least, less vague than the other theories, and is supported by the clinical fact that the epilepsy is rarely cured by freeing the intestinal tract of the parasites. The absence of worms or eggs in the stools is not proof of the absence of parasites in other parts of the body. Out of 100 cases of epilepsy in which the stools were examined, 56 were negative, 21 showed ascaris; 17 showed hookworm, 4 showed oxyuris, 1 *Taenia* (hymenolepsis) *nana*, 1 *Taenia saginata*. This shows 44 per cent. of the cases of epilepsy have worms. In 17 of the cases the worms or eggs were present on examination at the time of consultation, while in 27 cases they had been previously found in laboratory examinations or had been seen by the patients and described accurately. Most of the cases of ascaris belonged to this latter group. The work done by the Rockefeller Sanitary Commission showed that out of a total of 35,133 examinations, 11,418 people showed intestinal parasites (32.49 per cent.). As part of these were double infections, a total of 11,985 worms were found. Out of the last 1,000 cases examined in the laboratory of the Georgia State Board of Health, 250 showed worms (25 per cent.). Out of 1,695 stools examined (some of which were reexaminations of the same patient), 680 stools showed worms (40.12 per cent.).

Iowa State Medical Society Journal, Des Moines

March 15, 1921, 11, No. 3

Brain Injuries. A. M. Pond, Dubuque.—p. 75.
Lung Abscess; Report of Case. E. W. Meis, Sioux City.—p. 81.
Acute Infections of Nasal Sinuses: Treatment. T. R. Gittins, Sioux City.—p. 84.
Differential Diagnosis of Esophageal Stenosis. J. W. Shuman, Sioux City.—p. 89.
American Medicine. A. O. Williams, Ottumwa.—p. 91.
Reciprocal Relation of Wisconsin with Her Neighbors. J. M. Dodd, Ashland, Wis.—p. 93.
Cholelithiasis. F. S. Leonard, Cascade.—p. 97.

Journal of Bacteriology, Baltimore

March, 1921, 6, No. 2

Progress Report for 1920 Committee on Bacteriologic Technic. H. J. Conn, K. N. Atkins, I. J. Kligler, J. F. Norton and G. E. Harmon. —p. 135.
Variations in Hydrogen-ion Concentration of Broth Mediums. L. F. Foster and S. B. Randall, San Francisco.—p. 143.
Relation of Hydrogen-ion Concentration to Growth, Viability, and Fermentative Activity of Streptococcus Hemolyticus. L. F. Foster, San Francisco.—p. 161.
Biochemistry of Streptococcus Hemolyticus. L. F. Foster, San Francisco.—p. 211.
Flagellation of Nodule Bacteria of Leguminosae. I. V. Shunk.—p. 239.
*Method for Intravenous Injection of Guinea-Pigs. G. B. Roth, Washington, D. C.—p. 249.
*Rose Bengal as a General Bacterial Stain. H. J. Conn.—p. 253.

Method of Intravenous Injection.—The method elaborated by Roth makes use of the comparatively large superficial vein lying on the dorsal and inner aspect of the hind leg of the animal. This vein nearly always runs diagonally across the leg from the dorsal aspect below to the inner aspect above.

Rose Bengal as Bacteria Stain.—Rose bengal belongs to the phthalein series of dyes. It differs from eosin in that the four atoms of bromin in eosin are replaced by four atoms of iodin with the addition of two atoms of chlorin. The formula which has proved satisfactory is: rose bengal, 1 gm.; 5 per cent. phenol, 100 c.c. This solution remains in good condition for sevenal months. The chief value of this stain to the bacteriologist is that it has a great affinity for bacterial protoplasm but not for the slime or débris with which the cells are surrounded. It is therefore especially to be recommended for slime formers.

Journal of General Physiology, Baltimore

March 20, 1921, 3, No. 4

Theory of Injury and Recovery. W. J. V. Osterhout, Cambridge, Mass. p. 415.
Rate of Ovulation in Domestic Fowl During Pullet Year. S. Brody, Columbia, Mo.—p. 431.
*Phagocytosis of Solid Particles. W. O. Fenn, Boston.
I. Quartz.—p. 439.
II. Carbon.—p. 465.
Cause of Spontaneous Aggregation of Flagellates; and Reactions of Flagellates to Dissolved Oxygen. H. M. Fox, Cairo, Egypt.—pp. 483, 501.
Equilibrium Between Hemolytic Sensitizer and Red Blood Cells in Relation to Hydrogen-ion Concentration. C. B. Coulter, Brooklyn. —p. 513.
Summation of Dissimilar Stimuli Applied to Leaflets of Sensitive Brier (Schrankia). L. B. Bibb, U. S. Army.—p. 523.
*Comparative Studies on Respiration. Effect of Bile Salts and of Saponin on Respiration. M. M. Brooks, Cambridge, Mass.—p. 527.
Id. Effects of Hypotonic and Hypertonic Solutions on Respiration. O. L. Inman, Cambridge, Mass.—p. 533.
Production of Parthenogenetic Frogs. J. Loeb, New York.—p. 539.
Chemical and Physical Behavior of Casein Solutions. J. Loeb, New York.—p. 547.
Colloidal Behavior of Proteins. J. Loeb, New York.—p. 557.

Phagocytosis of Solid Particles.—Fenn states that the available evidence indicates that the phagocytosis of bacteria does not follow the law for a monomolecular reaction, possibly because of the toxic effect on the leukocytes of bacterial extracts.

Effect of Bile Salts and Saponin on Respiration.—Brooks claims that the addition of sodium taurocholate produces an increase in the rate of respiration at a concentraiton of 0.0000125 M, and a decrease at 0.001 M and in higher concentrations. Sodium chlorid is antagonized by sodium taurocholate, the most favorable proportion being 14,375 parts of sodium chlorid to 1 part of sodium taurocholate (molecular proportions). Solutions of saponin, at concentrations from 0.00005 M to 0.001 M decrease the rate of respiration; lower concentrations produce no effect.

Journal of Laboratory and Clinical Medicine, St. Louis

March, 1921, 6, No. 6

*Factors Modifying Duration of Ventricular Systole. L. N. Katz, Cleveland.—p. 291.
*Classification of Streptococcus; Sugar Fermentations, Limiting Hydrogen-ion Concentration, and Reactions on Milk Mediums. L. Arnold, Nashville, Tenn.—p. 312.
*Etiology of Acute Inflammations of Nose, Pharynx and Tonsils. S. Mudd, S. B. Grant and A. Goldman, St. Louis.—p. 322.
Relation of Pathologists to Institutional Practice of Medicine. W. C. MacCarty, Rochester, Minn.—p. 331.
Diagnosis of Typhoid and Paratyphoid Infections. H. J. Goeckel, Cranford, N. J.—p. 335.
*Routine Determination of Creatinin and Acetone in Urine. H. J. Goeckel, Cranford, N. J.—p. 338.
Benign Tumors of Gastro-Intestinal Tract. E. E. H. Boyer, Columbus, Ohio.—p. 339.

Factors Modifying Duration of Ventricular Systole.—The temporal variations of the cardiac phases in dogs with normal circulations were determined by Katz from optical records of the heart sounds. It was found that under natural conditions diastole is more variable than systole. The duration of diastole depends mainly, but not entirely, on vagus tonus. The variations of systole bear no constant relation to the preceding diastole, being even less affected than diastole by the vagus tonus.

Classification of Streptococcus.—The technic of the simple and rapid method of determining the hydrogen-ion concentration, recommended by Avery and Cullen, has proved satisfactory to Arnold. The hemolytic and nonhemolytic streptococci found in normal and pathogenic throats were of the same varieties, when classified by Holman's sugar fermentation tests, Avery and Cullen's final hydrogen-ion concentration and their action on brom-cresol-purple and methylene blue milks. In many cases of infected wounds, particularly those of the head and upper extremity, the same strains of streptococci were found in the throat and the wound.

Etiology of Acute Nose, Pharynx and Tonsil Inflammations.—The cause of acute inflammation of the pharynx, tonsils and nose recognized by Mudd and his associates are: 1. The filterable virus of Kruse and Foster, inducing apparently a clinical entity, a type of acute coryza. 2. Various bacteria, including the pneumococcus, streptococci, *B. rhinitis*, *B. diphtheriae*, Friedlander's bacillus, *B. influenzae*, and probably also *M. catarrhalis*, *B. septus*, *M. paratetragenus*, *S. aureus*, and possibly others. 3. Protein sensitization, the basis of vasomotor rhinitis and of true bronchial asthma, the underlying cause also of a relatively infrequent subgroup of acute recurrent "colds." 4. Various systemic diseases, drugs, mechanical and chemical irritants, chronic nasal affections and reflex neuroses. One factor by which resistance to bacterial infection may be lowered is excessive chilling.

Determination of Creatinin and Acetone in Urine.—Goeckel makes use of (1) a saturated aqueous solution of sodium nitroprusside; (2) a sodium hydroxid solution, and (3) glacial acetic acid. To a row of test tubes, approximately 5 c.c. of each urine is added in consecutive order. Ten drops of the nitroprusside solution are then added to each tube followed by sufficient sodium hydroxid solution (a few drops) to produce the maximum intensity of red color. A dense cherry red color indicates a normal or high creatinin content, while a paler shade will indicate a low content. This must be noted at once as the color begins to fade in the course of a few minutes. Glacial acetic acid is then added to each tube to determine acetone. In the absence of acetone, when the creatinin is normal or low, the urine returns to approximately its normal color. Should the creatinin be high, various shades of green will become evident. When the creatinin content is very high a deep blue precipitate will form. The presence of acetone will be indicated by the usual production of various shades of red when the glacial acetic acid is added. This application of the acetone test to indicate creatinin affords a ready means to differentiate between those nephritic cases showing probable creatinin retention and those which are not so far advanced. Goeckel also uses this test as the principal factor for advising against an operation when the creatinin is low.

Journal of Nervous and Mental Diseases, New York

March, 1921, 53, No. 3

*Study of Nissl's Staebchenzellen in the Cerebral Cortex in General Paresis, Senile Dementia, Epilepsy, Glioma, Tuberculous Meningitis and Delirium Tremens. U. Noda, Kioto, Japan.—p. 161.
Two Cases of Atypical Epidemic (Lethargic) Encephalitis, with Histopathologic Report. G. B. Hassin and F. H. Stangl, Chicago, and P. B. Bailey, Boston.—p. 217.

Nissl's Staebchenzellen.—Twenty-one cases were studied by Noda. A great number of these cells were found in ten cases of general paresis, one case of meningo-encephalitis, two cases of glioma, both in the tumor tissue and in the cortex. In six cases of senile dementia, and one case each of epilepsy

and delirium tremens only a few of these cells were found and, apparently, they were of no pathologic significance. They have a multiple genesis, some from mesodermal cells and others from glia cells. Some occasionally migrate from the pia of the cortex, as was shown in the case of tuberculous meningo-encephalitis.

Kansas Medical Society Journal, Topeka

March, 1921, 22, No. 3

Operative Obstetrics. G. R. Little, Wichita.—p. 77.
Infectious Diseases of Gallbladder and Ducts. L. O. Nordstrom, Salina.—p. 79.
Erysipelas Complicating Suppurative Otitis Media. H. L. Chambers, Lawrence.—p. 81.
Syphilis of Nervous System. K. A. Menninger, Topeka.—p. 82.
Large Ovarian Cyst with Co-existing Pregnancy; Report of Case. J. Rotter, Parsons.—p. 89.
Law for the Doctor; Application of Domestic Remedy for Fee as Practicing Medicine. L. Childs.—p. 90.

Minnesota Medicine, St. Paul

March, 1921, 4, No. 3

Some Problems of Internal Medicine. J. L. Miller, Chicago.—p. 119.
New Aspects of Problem of Cancer Control. F. L. Hoffman, Newark, N. J.—p. 124.
*Present Status of Splenectomy as Therapeutic Measure. H. Z. Giffin, Rochester, Minn.—p. 132.
*Hemolytic Icterus. W. J. Mayo, Rochester, Minn.—p. 138.
Epilepsy, Lethargic Encephalitis and Dementia Praecox. C. E. Riggs, St. Paul.—p. 141.
Factitious Toxicity of Previously Simple Goiters. T. L. Chapman, Duluth.—p. 148.
Fractures of Base of Radius. R. C. Webb, Minneapolis.—p. 151.
*Mixed Tumors of Parotid Gland. W. E. Sistrunk, Rochester.—p. 155.
*Polycythemia Vera. E. T. F. Richards and E. T. Herrmann, St. Paul.—p. 161.
Uses and Advantages of Electrically Driven Bone Surgery Equipment in Head Surgery, with Particular Reference to Ear, Nose and Throat Operations. L. W. Morsman, Hibbing.—p. 166.
Acute Lymphatic Leukemia; Report of Cases. G. D. Head, Minneapolis.—p. 169.

Splenectomy as Therapeutic Measure.—A general survey is made by Giffin with respect to operative death and postoperative duration of life, of 245 cases of splenectomy, for various diseases.

Hemolytic Icterus.—Mayo emphasizes that hemolytic icterus is not an infrequent cause of chronic jaundice, progressive anemia and early death. Splenectomy is the cure.

Mixed Tumors of Parotid.—The series of cases analyzed by Sistrunk comprises 103 patients. Recent communications have been received from all except ten. Eighty-five patients are known to be alive, and eight are dead, six from recurrence of the disease. A primary operation was performed for sixty-six of the 103 patients. Data with regard to the result have been obtained in sixty of these. Fifty-six are known to be alive and four are dead. No recurrence has developed in forty-nine from one to five years following operation. Eleven are known to have had recurrences following operation; seven of these are alive with recurrences or have been operated on for recurrences, and four are known to have died; one probably died from the disease other than cancer. Thirty-seven patients were operated on for recurrences which had developed following one or more previous operations; three are known to be dead. All of the recurrences appeared within one year after operation. The results following primary operations are better than results following operations for recurring growths; 93.4 per cent. of the patients with primary operations are alive, 18.3 per cent. have had recurrences and 6.6 per cent. are dead, while 89.2 per cent. of the patients operated on for recurring growths are alive, 37.8 per cent. have had recurrences, and 10.8 per cent. are dead. Sistrunk says that if all the primary operations had been performed for early and small growths the results would have been far better.

Polycythemia Vera.—In the case reported by Richards and Herrmann, venesection gave excellent results. The severe headache, dizziness, subjective sensations of tingling, numbness, etc., which the patient complained of when first seen, disappeared almost entirely after the first removal of 500 c.c. of blood. Altogether nine venepunctures were performed, the last eight chiefly in the hope of influencing the red count since the subjective symptoms had not reappeared. After the first venepuncture, the red cell count dropped by two million while the hemoglobin fell from 115 to 96 per cent.

Oklahoma State Medical Assn. Journal, Muskogee

February, 1921, 14, No. 2

Some Clinical Aspects of Contracted Pelves. W. A. Fowler, Oklahoma City.—p. 21.
Extra-Uterine Pregnancy. Diagnosis and Treatment. W. W. Wells, Oklahoma City.—p. 24.
Use of Corpus Luteum in Nausea and Vomiting of Pregnancy. A. C. Hirshfield, Oklahoma City.—p. 26.
Roentgen-Ray Diagnosis of Urinary Tract. C. M. Ming, Okmulgee.—p. 28.
Roentgen-Ray and Radium Treatment of Carcinoma of Uterus. M. M. Roland, Oklahoma City.—p. 30.
Importance of Radiography in Infancy and Early Childhood. J. E. Heatley, Oklahoma City.—p. 32.
Ergot in Typhoid. L. Atherton, Tulsa.—p. 33.
Wassermann Reaction: An Appeal for Standardization. W. Langston, Oklahoma City.—p. 33.

Pennsylvania Medical Journal, Harrisburg

March, 1921, 24, No. 6

Some Problems of Glaucoma. W. H. Wilder, Chicago.—p. 367.
Blood Pressure Guides During Anesthesia and Operation. A. H. Miller, Providence, R. I.—p. 372.
*Third Stage Ether Anesthesia. A Subclassification, with Significance of Position and Movements of Eyeball. A. E. Guedel, Minneapolis.—p. 375.
Anesthesia Problem in Lung Surgery. J. T. Gwathmey, New York.—p. 380.
Nitrous Oxid-Oxygen Analgesia and Anesthesia in Normal Labor and Operative Obstetrics. W. C. Danforth, Evanston, Ill.—p. 383.
Oral and Sinus Surgery in Forward Inclined Sitting Posture, Under Nitrous Oxid-Oxygen Anesthesia. I. O. Denman, Toledo.—p. 388.
Postoperative Complications of Respiratory Tract. H. R. Decker, Pittsburgh.—p. 391.
Problems of Chest Surgery as Met by Physiologic Drainage. L. F. Stewart, Clearfield.—p. 396.
*Hypertrichiasis in Childhood: So-Called "Dog-Faced Boy." F. C. Knowles, Philadelphia.—p. 401.
*Vaccine Treatment of Pertussis. R. K. Rewalt, Williamsport.—p. 404.
*Diabetes (Pancreatic) Caused by Infection of Tonsils. S. H. Blodgett, Boston.—p. 407.
State Tuberculosis Work, What is Being Done, and Future Plans. A. P. Francine, Harrisburg.—p. 411.
Modern Therapeutics. H. C. Wood, Jr., Philadelphia.—p. 413.
Diagnosis and Treatment of Perforated Ulcers of Stomach and Duodenum. H. A. McKnight, Philadelphia.—p. 416.
Inspection of Milk Production. I. P. P. Hollingsworth, Philadelphia.—p. 419.
Angioma of Small Intestines. N. Shillito.—p. 421.
Some Complications of Diabetes Mellitus. L. Litchfield.—p. 422.

Ether Anesthesia.—Guedel encourages lighter and more even ether anesthesia. He has prepared a schematic chart showing the significance of certain reflexes under various stages of ether anesthesia. Guedel states that as long as there is any movement or eccentric position of the eyeball, aside from that which might be normal for the occasional patient, that patient has not had too much anesthetic; but after anesthesia has been well inaugurated, he has had quite enough.

Hypertrichiasis in Childhood.—Knowles' patient, aged 4 years, was one of six children, but the only one showing this abnormality. The child was well developed, splendidly nourished, and of average mentality. There was a heavy growth of soft black hair, in many places an inch or more in length, extending over all portions of the back, the arms, the legs, the abdomen, the chest and the face.

Vaccine Therapy of Pertussis.—In 130 cases of pertussis where vaccine was used by Rewalt, the straight vaccine, i. e., the one consisting of the Bordet bacillus alone, was the one of choice. A mixed vaccine containing the Bordet bacillus, the pneumococcus, the streptococcus and the staphylococcus was used in some cases, chiefly the ones complicated by, or following pneumonia. In six cases the treatment was an absolute failure. In forty-five cases benefit of more or less degree was obtained. The other seventy-nine cases showed marked improvement. In some the results were said to be little short of marvelous. In infants an initial does of from 250 millions to 500 millions was used and this was increased to 1 billion or more as the symptoms demanded. From three to eight doses were given at intervals of from forty-eight to seventy-two hours. More than eight doses were not considered necessary. In older children an initial dose of 500 millions was given and each succeeding dose was doubled as was deemed necessary. In other words, if after the second dose of 1 billion or the third dose of 2 billions there seemed to be improvement the succeeding doses were held at that figure. If no improvement was noted, the larger doses were given. Occasionally, a reaction was noted by a temporary

rise in temperature or increase in paroxysms. No reaction lasted over twenty-four hours. There are no contraindications to the use of vaccines in the treatment of pertussis, Rewalt says.

Diabetes Caused by Infection.—Blodgett claims that at least a considerable number of cases of the acute pancreatic form of diabetes are due to an infection of the pancreas following an infection of the tonsil. He reports four such cases. One was a case of acute pancreatic diabetes coming on suddenly within two weeks after an attack of mumps, and we also have a test showing sugar-free urine on the first day of the tonsil infection, thus indicating that previous to the infection in the tonsils there had been no sugar in the urine. Another was a case of acute pancreatic diabetes appearing about twelve days after a severe infection of the tonsils, and a reappearance of sugar and a lowered carbohydrate tolerance following each attack of sore throat (of which there were three) until finally death occurred. In the third case there was sudden appearance of sugar, polyuria, polydipsia and loss of flesh in a boy previously healthy, within a month after a severe tonsillitis. When placed on a semirigid diet, the amount of sugar in the urine was daily being reduced until an infection of the tonsils took place, and notwithstanding that the patient took only water, the blood sugar increased and the urine sugar also increased, and would not decrease until a much more rigid diet was prescribed than had previously been necessary to cause a constant daily reduction. A very interesting thing was the fact that following the operation for removal of the tonsils, although only liquids, consisting of thin meat soups and water, were taken for forty-eight hours, a slight amount of sugar appeared in the urine for two days; also a trace of acetone.

Philippine Journal of Science, Manila

October, 1920, 17, No. 4

Action of Some Fungicides on Citrus-canker Organism. A Progress Report. H. A. Lee, Manila.—p. 325.
New Reared Parasitic Hymenoptera from Philippines. A. B. Gahan, Washington, D. C.—p. 343.
Psyllidae of Borneo. D. L. Crawford.—p. 353.
Higher Basidiomycetes from Philippines and Their Hosts, IV. O. A. Reinking.—p. 363.
Myrmeconaucles, New Genus of Rubiaceous Plants from Palawan and Borneo. E. D. Merrill.—p. 375.
Comments on Cook's Theory as to American Origin and Prehistoric Polynesian Distribution of Certain Economic Plants, Especially Hibiscus Tiliaceus Linnaeus. E. D. Merrill.—p. 377.
*Atypical Ameba Causing Dysenteric Lesions. C. C. Chatterjee, Calcutta.—p. 385.
Utilization of Waste Molasses in Philippine Islands; with Special Reference to Haciendas of Necros. H. J. Carsten, Iloilo, P. I.—p. 395.
*Certain Cardiac Reflex Symptoms Due to Disturbances of Remote Organs. A. G. Sison, Manila.—p. 409.
Clinical Observation on Experimental Starvation in Human Beings. A. G. Sison, Manila.—p. 415.

Atypical Ameba Causing Dysenteric Lesions.—An ameba causing fatal dysenteric lesions and differing from the classical pathogenic species in its nuclear and other characters was isolated by Chatterjee from a large elevated inflammatory patch on the peritoneal surface of the wall of a portion of the intestine that was matted together. A smear was made from this inflamed patch on the peritoneal side, and this was examined microscopically. It contained numerous actively motile amebas. Smears of the pus then lumen of the intestine were found to be free from other micro-organisms. The ameba found differs from *Endamoeba histolytica* in the following essential points: (1) The nucleus is massive—not karyosomic; (2) there is marked distinction between ectoplasm and endoplasm. (3) chromidia are absent. The lesions caused by this organism differ from those familiar in dysentery of *Endamoeba histolytica* origin, in that the small intestine is attacked—a phenomenon heretofore absolutely unknown in dysentery of endamebic origin. Furthermore, the peculiar peritoneal involvement is unique. Chatterjee designates this ameba *Endamoeba paradysenteria*, sp. nov.

Cardiac Reflex Symptoms.—The factors that may be responsible for the production of cardiac reflex symptoms due to disturbance of the stomach, intestines, liver and genitalia are grouped by Sison under three heads: (1) Mechanical; (2) chemical, and (3) psychic. The mechanical theory may be explained in two ways; either by encroachment of the distended stomach on the space occupied by the heart, or by the mechanical irritation of the nerve ending on the wall of the stomach, produced by the stretching of the wall. Mere overloading is not always followed by such symptoms; they may be present without dilatation or distention. The chemical causes may be endogenous or exogenous. The endogenous may be toxic substances which originated in a perverted digestion, or may be certain internal glandular secretions or hormones which, when present in the blood in larger amounts than normal, may disturb the heart action without necessarily causing pathological, change in the organ. They may act, however, in manifold ways on the central nervous system, on the intrinsic nervous mechanism of the heart, or on the heart muscle itself. The psychic factors are probably ultimately chemical. No one of these factors is the only one responsible for the production of the cardiac reflex symptoms; but all or one of them may play some rôle in producing the symptoms in individual cases, and in many instances one or all of them may help to cause the cardiac syndrome designated under the name of cardiac reflex symptoms.

Porto Rico Medical Association Bulletin, San Juan

February, 1921, 15, No. 129

*Differential Diagnosis of Tropical Pyrexias Most Commonly Encountered in Porto Rico. Arturo Torregrosa.—p. 1. Cont'd.
Diet in Sprue. Bailey K. Ashford.—p. 22.
Problem of Venereal Disease. F. del Valle Atiles.—p. 34.

Differential Diagnosis of Pyrexias in Porto Rico.—In this fourth instalment, Torregrosa discusses how to distinguish between continuous and remittent malaria and stomach-liver infections and between the former and typhoid. Even simple intestinal infections assume a puzzling temperature course there, and it often proves that what seemed to be an acute gastric indigestion and then a "gastric fever," suggests typhoid by its persistence and temperature curve, but finally examination of the blood reveals the malaria parasites, and prompt recovery follows exhibition of quinin. The family, and often the physician, believe that malaria has become superposed on typhoid, but earlier examination of the blood would show that malaria was responsible throughout and might have been aborted at the start. If quinin is given, the inolerant stomach may reject it at once, adding to the confusion as the anticipated benefit from the quinin does not follow. He protests against the routine practice of giving quinin, hit or miss, in every pyrexia. In this case it is not given systematically or in adequate doses, and merely misleads. Typhoid in Porto Rico usually begins suddenly, with a chill, and the fever runs up high the first or second day. The remissions are more pronounced than is usual in typhoid, and there are few and slight, if any, nervous symptoms—all of which adds to the difficulty of distinguishing between it and continuous, remittent malaria. He reviews all the signs and symptoms that may aid in differentiation, but his own rule is to exclude malaria first in every continuous fever in the tropics before considering any other etiology.

Texas State Journal of Medicine, Fort Worth

February, 1921, 16, No. 10

Gynecology and Obstetrics. C. Johnson, Fort Worth.—p. 428.
Value of Rectal Examination in Obstetrics. G. V. Morton, Fort Worth.—p. 430.
Management of Second Stage of Labor a Gynecologic Factor. C. H. Harris, Fort Worth.—p. 432.
Cesarean Section for Unusual Conditions. M. C. O'Brien, San Antonio.—p. 435.
Torsion of Splenic Pedicle Complicating Puerperium. J. W. Bourland, Dallas.—p. 436.
Diagnosis and Conservative Treatment of Placenta Praevia. C. R. Hannah, Dallas.—p. 439.
Ectopic Pregnancy. G. B. Thaxton, Dallas.—p. 440.
Eclampsia. H. Allison, Kingsville.—p. 444.

Virginia Medical Monthly, Richmond

March, 1921, 47, No. 12

Endocrine Secretions. H. W. Phillips, Norfolk.—p. 583.
Roentgen Ray in Treatment of Hyperthyroidism. F. M. Hodges, Richmond.—p. 586.
Factors in Control of Metabolic Disturbances. W. W. Silvester, Norfolk.—p. 588.
Roentgen Ray as Diagnostic Aid to Internist. A. G. Brown, Richmond.—p. 592.
*Certain Types of Cerebral Manifestations in Cardiorenal Diseases. W. H. Higgins, Richmond.—p. 598.
Use of Electrocardiograph in Diagnosis and Treatment of Heart Disease. J. M. Hutcheson, Richmond.—p. 602.

*Pulmonary Abscess Following Tonsillectomy Under Local Anesthesia. W. B. Porter, Richmond.—p. 606.
Use of Pituitrin in Obstetrics. G. B. Barrow, Clarksville.—p. 609.
Extra-Abdominal Causes of Acute Abdominal Pain. J. H. Smith, Richmond.—p. 611.
Borderline Cases of Insanity. A. Anderson, Raleigh, N. C.—p. 613.
Blood Cultures vs. Widal in Typhoid Infections. A. F. Robertson, Jr., Staunton.—p. 615.
Mucous Colitis. G. P. Hamner, Lynchburg.—p. 617.
Boiling Water Injections in Hyperthyroidism. A. B. Grubb, Cripple Creek.—p. 620.

Cerebral Manifestations in Cardiorenal Disease.—Higgins calls attention to the fact that cerebral manifestations frequently are associated with alterations in the circulatory system and are dependent on either a cerebral anemia or an increased intracranial pressure. Cardiopaths are prone to develop hallucinations, and a postoperative psychosis may often be explained by a failing circulation. The cerebral manifestations of a chronic nephritis with hypertension may easily simulate those of a brain tumor and are due to a general or localized cerebral edema. The advisability of a decompression, as a palliative measure, in those cases in which medical treatment has failed, is well illustrated in a case reported.

Pulmonary Abscess Following Tonsillectomy.—Two cases of definitely diagnosed pulmonary abscess are reported by Porter; both occurring in connectin with tonsillectomy done under local anesthesia but could not reasonably be ascribed to aspiration. A logical route of infection would be through the venous return from the field of operation, emboli becoming dislodged in veins thrombotic from trauma and infection. Both cases occurred in patients who presented definite evidence of existing pulmonary tuberculosis.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

February, 1921, No. 247

Diagnosis and Differential Diagnosis of Tuberculosis in Bones and Joints. G. Forwell.—p. 257.
History of Electrotherapy. H. A. Colwell.—p. 271.

Edinburgh Medical Journal

March, 1921, 26, No. 3

Prenatal Death. A. Robinson.—p. 137.
*Epididymitis and Orchitis from Muscular Strain Followed by Tuberculosis of Epididymis. C. W. Cathcart.—p. 152.
*Case of Painless Labor in a Primipara. G. E. W. Henderson.—p. 186.

Epididymitis and Orchitis from Muscular Strain.—Cathcart claims that acute orchitis and epididymitis may be caused by a severe abdominal strain and may show itself by pain, swelling and discoloration within an hour or two of the onset. This may occur without any gonococcal or other organismal infection of the urethra or of the parts affected. It may occur without any apparent abnormality of the testicle. The acute inflammation is sometimes, at least, the result of torsion of the cord induced by the strain, which possibly acts by exciting vigorous or irregular action of the cremaster muscle. In some cases the inflammation may be caused by a rupture of the vas deferens with simultaneous injury to the vessels and nerves of the cord. The acute orchitis and epididymitis thus produced may end (*a*) in an active tuberculous affection of the epididymitis, either by exciting a latent focus of tuberculosis, or by giving rise to the conditions suitable for the development of a new focus; or (*b*) in complete atrophy of the testicle. As a corollary to the possible presence of torsion of the cord in these sudden attacks of pain in the groin and testicle during muscular strain, it is advisable for the medical attendant to treat them as torsions of the cord unless he can be satisfied that no torsion exists at the time he sees the case.

Painless Labor.—The patient whose case is cited by Henderson was aged 23, and of somewhat slight build. Throughout her pregnancy, her health was excellent; she did a lot of dairy work, including the milking of several cows, right up to the morning of her confinement. When first seen the patient was lying in bed, and expressed herself as feeling quite comfortable. On examination, the head was found on the perineum, which was tightly stretched and bulging. The membranes were already ruptured, although neither patient nor nurse had noticed any escape of waters. About six hours before, the patient felt a "heaving" in her abdomen, associated with a feeling of "something pressing down." This "heaving" had come on at regular intervals, at first every half hour, but later at more frequent periods. The uterus contraction was severe and prolonged, but there was absolutely no pain. During the contraction the patient did not hold her breath. The patient's nervous system was normal; reflexes present and normal. Sensation to touch, heat and cold normal.

Journal of Laryngology and Otology, Edinburgh

March, 1921, 36, No. 3

*Partial Thyroidectomy. J. Harper.—p. 114.
Chorditis Fibrinosa. A. B. Kelly.—p. 118.
Conservative Treatment of Chronic Middle Ear Suppuration. A. Campbell.—p. 121.
"Latent" Thrombosis of the Lateral Sinus. D. Gutherie.—p. 127.

Partial Thyroidectomy.—Harper has made it a practice of removing the whole of the lobe of the thyroid along with the isthmus, when the growth has reached the size of a hen's egg, since he has found that in those cases in which the growth has reached this dimension the lobe of the thyroid is also affected. He finds no difficulty in removing the thyroid in this manner with the forefinger, and in no case has he found it necessary to ligature an artery. The gland comes away easily from the capsule, and arterial hemorrhage does not occur. The principal point of the operation consists in removing the thyroid out of its capsule, using only the finger. Shock to the patient at the time of operation is practically nonexistent, while in all the cases recovery has been uneventful. The recurrent laryngeal nerve has in no case been interfered with, and he believes that the risk of injury to this nerve is reduced to a minimum.

Medical Journal of Australia, Sidney

Feb. 12, 1921, 1, No. 7

Surgical Problems of Stomach and Duodenum. H. B. Devine.—p. 123.
*Case of Voluntary Control of Fusion Faculty. J. Barrett.—p. 131.

Voluntary Control of Fusion Faculty.—Barrett's patient had binocular vision, but he possessed the faculty of being able to dissociate the two eyes and to cause diplopia by moving either eye outward, either separately or together. When he fixed with one eye and diverged the other, the deviation was about 20 degrees. He could turn both eyes out at the same time, each about 20 degrees. He possessed great powers of convergence and could converge to a point approximately 5 cm. from the ocular base line.

Feb. 19, 1921, 1, No. 8

*Erythredema. A. J. Wood.—p. 145.
Hookworm in Australia. W. A. Sawyer.—p. 148.
Teaching of Preventive Medicine to Medical Students. F. S. Hone.—p. 150.

Erythredema.—This disease, Wood claims, is not an uncommon one. He has notes of forty cases and a colleague has notes on fifty-one cases. The symptoms of erythredema are most characteristic when well developed. The child holds the head bent down; usually it is whining and fretful. Some patients do not seem able to rest, scratching at their feet or pulling at their hair or ears, frequently making them bleed. If placed on the floor or in their perambulators they will bend their heads forward almost down to their feet. They do not smile, and they resent any attempt to amuse them. In some cases the red swollen appearance of the hands is an early symptom, and if present, is absolutely pathognomonic of erythredema. These little patients are worn out for want of sleep and in absolute distress from the intolerable irritation of the skin of body, hands and feet. They sometimes become very vicious, scratching and biting at their mother's faces. The mothers also look worn and distressed from long weeks of sleepless nights. The earliest symptoms in the case of young infants seems to be the continual fretfulness and inability to sleep at night, with disinclination for breast or bottle. A little later, it may only be two or three weeks or as late as four or five months after the onset of the fretfulness, the redness of the hands and feet appears. Wasting is an early symptom and with the wasting the muscles become

soft and weak. The neck muscles do not appear able to support the head properly, and in older children the power of sitting up or walking is lost early in the disease. Stomatitis is a frequent symptom. The irritability of the skin leads to scratching and various movements of the body to gain relief. The redness of the hands and feet accompanied by an icy coldness to touch is the most characteristic symptom of this disease. The redness, as a rule, is limited below the wrist line. It is usually persistent once it appears, but it is not always present in the early stages of the disease. The loss of finger and toe nails is by no means rare. With the redness and coolness there is also sweating and the formation of small vesicles about the fingers and toes. It is the scratching at and breaking of these vesicles that frequently start the ulcerations. The free action of the skin in cases of erythredema is, with the redness of the hands and feet, one of the most marked features of the complaint. When the rash is marked it is common to find the glands in the axillae and groins enlarged. The rectal temperature generally is about 37.8 C. The prognosis is good; the majority of the patients get quite well. The treatment wholly symptomatic.

Practitioner, London

March, 1921, 106, No. 3

Dyspepsia and Malassimilation in Children. H. C. Cameron.—p. 153.
Disadvantages of Dried Milk in Infant Feeding. J. Burnet.—p. 170.
Roentgen-Ray Localization at Base in France. W. Cotton.—p. 172.
Electrocardiography on Active Service. A. D. Brunwin.—p. 183.
Prevention and Treatment of Cancer. A. L. Smith.—p. 189.
Mechanotherapeutics; Necessity for Their More Extended Application. A. Kellgren-Cyriax.—p. 202.
Swelling of Pinna, an Early Sign of Deficient Antiscorbutic Vitamin. H. Sheasby.—p. 215.
Selection of Blood Donors for Transfusion. H. W. Jones.—p. 217.

Swelling of Pinna Early Sign of Deficient Antiscorbutic Vitamin.—Swellings of one or both ears among the occupants of a group of internment camps in England were diagnosed as infective cellulitis, and one or two of the earlier cases were incised, but no pus was found, and the condition persisted in spite of the usual treatment for cellulitis. As more cases occurred, further inquiry was made, which showed that the sign was due to a mild degree of scurvy. About thirty cases were noted. In twenty-four of the cases one ear only was affected, in the remainder the other ear was also involved, to a greater or less extent. In most of the cases the swelling occupied the upper half of the left pinna. The skin of the affected ear was reddened, and there was very slight pitting on pressure; no blood staining was visible, and only very slight tenderness on manipulation. In a few cases the swelling had extended into the subcutaneous tissues of the scalp and pushed the ear slightly downward and forward. No involvement of the gums or ecchymoses could be detected, and, beyond slight weakness and pallor, no other sign of scurvy could be made out. On steps being taken to have the vegetables and potatoes cooked separately and not stewed with the meat, the symptoms disappeared, and no further cases occurred.

Tropical Medicine and Hygiene, London

March 1, 1921, 24, No. 5

Paramelitensis Infection in Man and Animals. P. W. Bassett-Smith.—p. 53.
Peculiar Pyrexia Due to a Flagellate. M. Leger.—p. 54.
Bronchial Spirochetosis. R. W. Mendelson.—p. 59.

Tubercle, London

March, 1921, 2, No. 6

Construction of an Institution for Heliotherapic Treatment of Surgical Tuberculosis. A. Rollier.—p. 241.
*Are Tubercle Bacilli Present in Blood of Tuberculous Patients? A. Distaso.—p. 251.
Diagnosis of Pulmonary Tuberculosis. N. Bardswell.—p. 257.

Tubercle Bacilli in Blood.—The evidence presented by Distaso points to the conclusion that tubercle bacilli may be present in the blood of patients with pulmonary tuberculosis without pyrexia. They were found in no other type of the disease. Out of eighty-four experiments, positive results were only obtained in ten cases, with two other doubtful cases. All twelve concerned a definite group composed of cases of pulmonary tuberculosis with temperature varying daily between 97 and 99.5 F.

Bulletin de l'Académie de Médecine, Paris

Feb. 8, 1921, 85, No. 6

*Typhoid Fever Since the War. E. Sergent.—p. 182.
Graphic Record in Diagnosis of Arch of Aorta. E. Lenoble.—p. 184.
Stability of Ouabain. M. Tiffeneau.—p. 187.
Photographic Photometry for Roentgen-Ray Work. A. Zimmern.—p. 189.
Dosimetry Based on the Biologic Laws of Radiations. H. Guilleminot.—p. 192.
*Exophthalmic Goiter in Rural District. F. Regnault.—p. 193.

Typhoid Fever Since the War.—Sergent states that in the last few years before the war there were twice as many male cases of typhoid as of female cases, but since the war there have been three times as many in women as in men.

Exophthalmic Goiter in Rural District.—Regnault has been studying the development of simple endemic goiter and its transformation into exophthalmic goiter in a rural district. This may occur after one or more pregnancies or after emotional stress; the war was responsible for a large number of cases. He does not know of any other study of this subject in a remote rural endemic focus.

Bulletins de la Société Médicale des Hôpitaux, Paris

Feb. 18, 1921, 45, No. 6

Colloidal Metals in Treatment of Malta Fever. C. Souleyre.—p. 176.
*Transient Hemolysis Following Puncture of Hydatid Cyst. A. Bergé, R. Bénard, R. A. Guttmann and J. Roberti.—p. 184.
*Syphilitic Aneurysm of Abdominal Aorta. Y. Manouélian.—p. 192.
*Acute Leukemia. A. Coyon and J. Lavedan.—p. 196. Idem. J. Broussolle.—p. 205. Idem. Idem and N. Fiessinger.—p. 211.
*Bubonic Plague in Children. Guinon and de Pfeffel.—p. 215.
*Otitis Media with Epidemic Hiccup. Loeper and J. Forestier.—p. 221.
Ependymitis Simulating Epidemic Encephalitis. Idem.—p. 223.
Syphilitic Lesion in Caudate Nucleus. Idem.—p. 226.
*Alkali Prophylaxis of Serum Sickness. Sicard and Paraf.—p. 229.
Syncopal Laughing and Yawning as Symptoms of Epidemic Encephalitis. Sicard and Paraf.—p. 232.
Carbon Dioxid for Pneumoperitoneum. Ribadeau-Dumas and Mallet.—p. 235.

Transient Hemoclasis Following Puncture of Hydatid Cyst.—Bergé and his co-workers report that a fulminating *crise hémoclasique* developed at puncture of a hydatid cyst in the liver. There was agitation, with congestion of the face and rise in temperature; these symptoms were not very pronounced but the hemolysis was extreme for a time, the leukocytes dropping from 10,200 to 5,200 in ten minutes. The blood had returned to its former condition before the clinical symptoms had developed. Sicard suggests that it might be well to make a preliminary injection by the vein of 1 or 2 gm. of sodium carbonate, dissolved in 50 or 60 c.c. of distilled water, as this has proved so effectual in warding off anaphylactic shock, under other conditions.

Syphilitic Aneurysm of Abdominal Aorta.—Manouélian reports a fifth case of aneurysm of the aorta in which the spirochete was found in the tumor. The aneurysm was in the abdominal aorta in two of these cases, and in this latest case pain was severe and worse at night. The nerves in the region showed signs of neuritis, and this syphilitic neuritis is the anatomic basis for the pain in such cases. He emphasizes the connection between the degenerative lesions in the solar plexus and the atheromatous lesions in the aorta.

Acute Leukemia.—Coyon and Lavedan report a case in which the leukocyte count ran up to 720,000. The blood showed the embryonal forms prevailing, the corpuscles undifferentiated.

Bubonic Plague in Children.—In one of the two cases described, the child of 3 died but the other a little older had merely redness of the throat and very slight reaction in a few glands; otherwise the bubonic plague was latent. There had been a frank case in the same building. In the other child the plague bacilli caused a suppurating skin process as well as meningitis. In two other cases plague meningitis occurred without enlargement of glands, and the blood seemed to be sterile but the spinal fluid swarmed with the bacilli. Inoculation of animals gave conclusive results.

Epidemic Hiccup Complicated with Otitis.—The hiccup in the woman of 23 kept up, thirty or forty times a minute, for several days. As it disappeared, symptoms of otitis media became manifest, with discharge of pus the tenth day. This case suggests the possible entrance of the virus by the pharynx.

Prophylaxis of Serum Sickness.—Sicard and Paraf reiterate that intravenous injection of sodium carbonate seems to be able to ward off all disturbance from serum sickness. For this they use a 2.5 per cent. solution of crystallized sodium carbonate. Unfortunately, they add, this method of prophylaxis is difficult to apply to children. They inject by the vein 1 gm. of the carbonate in 40 c.c. of distilled water. This is followed by injection of the horse serum or antitoxin in muscle or subcutaneous tissue.

Encéphale, Paris

February, 1921, **16**, No. 2

Progressive Syphilitic Sclerosis with Amyotrophy. H. Claude and H. Schaeffer.—p. 65.
*The Oculocardiac Reflex. J. Roubinovitch, J. Lauzier and M. Laurent. —p. 73.
*Psychanalysis of Greuze Painting. A. Stocker.—p. 78.
Aphasia and Psychology of Thinking. R. Mourgue.—p. 85. Cone'n. Suboccipital Rachicentesis. Obregia (Bucarest).—p. 92.
Congenital Predisposition in Endocrine Derangement. H. Claude.—p. 93.

The Oculocardiac Reflex in General Paresis and Tabes.—The changes in the manometer cycle of the oculocardiac reflex are given in several cases of general paresis and tabes and some normal controls.

Psychanalysis of Greuze Painting.—Stocker has been applying Freud's psychanalysis to the famous painting, "Girl with Broken Pitcher" by Greuze, 1777. A reproduction of the painting is given. It apparently is a personification of artless innocence, but Stocker interprets it that the intent of the artist was to portray "La Défloree."

Gynécologie et Obstétrique, Paris

January, 1921, **3**, No. 1

*Spirochetes in the Placenta. Y. Manouélian.—p. 1.
*Radiography of Circulation in Placenta. A. Brindeau and M. Boussin. —p. 7.
*Uterus Didelphys. J. Okinczye and P. A. Huet.—p. 15.
Fibroma of the Vagina. F.-M. Cadenat.—p. 21.
*Radiotherapy of Fibromas. H. Hartmann.—p. 33.

Spirochetes in the Placenta.—Manouélian's photomicrographs explain, by the evidence of intense local phagocytosis, the rarity of the discovery of spirochetes in the placenta. All here may be incorporated in phagocytes in the blood stream or in the endothelial cells of the capillaries, even when the viscera of the fetus may be swarming with the spirochetes.

Radiography of Circulation in Placenta.—Brindeau and Boussin inject the vessels of the placenta at once with mercurial ointment, liquefied by heat, and then solidify it by plunging the specimen in cold water, and soaking it in a solution of formaldehyd for forty-eight hours. The blood is first massaged out of the vessels and they are rinsed clean. Several colored roentgenographs are given.

Unilateral Hysterectomy.—One half of the uterus didelphys was resected on account of unilateral salpingitis. The deformity, which included vagina bifida, had not been suspected until the adnexitis compelled intervention.

Raising the Pelvis for Radiotherapy of Uterine Fibromas.—Hartmann urges the necessity for sparing the intestines in irradiation of the uterus, and says that nothing aids so effectually in this as raising the pelvis to force the intestines to slide down out of the way.

Journal d'Urologie, Paris

November-December, 1920, **10**, No. 5-6

*Tuberculosis of the Kidney. Caspari.—p. 329.
Syphilitic Disease of the Bladder. A. Boeckel.—p. 401.

Tuberculosis of the Kidney.—Caspari analyzes sixteen operative cases long under supervision. In the majority the initial lesion seemed to have been in the medullary substance, but in two it was found in the cortical substance. In 25 per cent. of the total cases the kidney was movable and sagged more or less, but in one case the kidney was in its normal place while the sound kidney was extremely movable. The tuberculous kidney is not enlarged until pus accumulates in large amounts; in two of his cases the kidney was abnormally small. Tuberculosis of the kidney usually manifests itself at first only by bladder disturbances. The cystitis is too often treated as exclusively a bladder disorder, and the causal kidney disease not sought for. The frequency of micturition is beyond that with any other morbid condition, especially at night. Enuresis in childhood is often found in the history of cases of renal tuberculosis. The pain at micturition may be most severe at the last drops and for a time afterward. Hematuria can almost always be detected with the microscope; a renal origin must not be excluded if the blood shows only terminal. In some of his cases the patients seemed in almost florid health. In three, the kidney could be palpated but it was not at all tender, and in five others the kidney escaped palpation and not the slightest tenderness in the region could be discovered. In one case the ureter could be felt through the abdominal wall as a hard tender tumor. In most of the cases the ureter could be palpated through the vagina and was tender; in one case this caused pain in the kidney above. In one man, palpation of the ureter through the rectum cleared up the diagnosis. Tubercle bacilli were found in the urine under the microscope in 75 per cent. of the cases. Over seventy pages are devoted to the illustrated descriptions and conclusions therefrom.

Lyon Médical

Feb. 25, 1921, **130**, No. 4

*Roentgen-Ray Treatment of Sciatica. P. Japiot.—p. 145.
The Hospitals of Lyons in the Wars of the Past. A. Croze.—p. 183.

Roentgen-Ray Treatment of Sciatica.—Japiot has been impressed with the advantages of roentgen-ray treatment of sciatica by his experiences in ten cases, many of them rebellious to all other measures. The effects surpassed all anticipations, even in those of from one to ten years' standing. The benefit seems to be limited to the abolition of the pain; other symptoms were not modified. The effect was equally good in a case of Dercum's disease, and in three of pain from sacralization of the fifth lumbar vertebra, relieving the pain promptly. The action is probably due to the decompression of the nerve, possibly from sweeping out the inflammatory cells or the edema. A little morphin can be given to the patient to enable him to be sent to the proper center for the exposures, and the technic is within the reach of any modest installation for roentgen work. The segment of the nerve between its emergence from the spinal cord and the plexus was the portion exposed. It is thus radiotherapy of the roots involved. The rays are applied along the fourth and fifth lumbar and the first four sacral vertebrae, slanting down to the nerve, filtered through from 1 to 3 mm. aluminum. The intervals were from ten to twenty days, and the dose of 3 H seemed to be sufficient for the purpose.

Médecine, Paris

February, 1921, **2**, No. 5

*French Neurology in 1920. Laignel-Lavastine.—p. 341.
Medical Psychology. P. Janet.—p. 352.
Case of Psychorexuality with Motor Instability. E. Dupré.—p. 357.
*Para-Osteo-Arthropathy. Mme. Dejerine and A. Ceillier.—p. 363.
The Soil in Epidemic Encephalitis. J. Lépine.—p. 368.
Benzoin Reaction in Spinal Fluid. G. Guillain and others.—p. 370.
Vocational Training After Wounds of Nervous System. M. Villaret.—p. 375.
Neurosyphilis Without Meningeal Reaction. C. Vincent.—p. 380.
Pathologic Physiology of the Striate Body. J. Lhermitte.—p. 385.
Mental Confusion and Dementia. Juquelier.—p. 387.
*Neuralgia of the Sympathetic System. J. Tinel.—p. 392.
Drugs in Treatment of Epilepsy. O. Crouzon and Bouttier.—p. 399.
Treatment of Tabes. A. Sézary.—p. 405.
Treatment of Excitement in the Mentally Unstable. Courbon.—p. 410.

Recent Progress in Neurology.—Laignel-Lavastine reviews what has been accomplished in France in this line in 1920. He emphasizes that the knowledge of epidemic encephalitis is throwing light on many nervous affections previously obscure, such as chorea, paralysis agitans and dementia praecox—all these sets of symptoms have been realized by epidemic encephalitis. It has further confirmed the connection between infection and mania; the rapidity of the development of the psychiatric consequences of the causal infection has convinced every one of the direct relation. He regards as further progress the introduction into therapeutics of phenobarbital and of soluble cream of tartar, both of which, he says, have proved very useful in treatment of epilepsy. For severe trigeminal neuralgia now, only the sensory root of the nerve is resected. T. de Martel operates for a tumor in the cerebellopontine angle, under local anesthesia, by the Cush-

ing method, the patient seated. Another achievement is what is called colloidal psychiatry, seeking to utilize the anaphylactic shock, based on Widal's study on colloidal shock, the *crise hémoclasique*, in treatment of states of pathologic anxiety. Marie has reported improvement in a grave case of bulbospinal myasthenia under suprarenal treatment, and Vernet has cured vertigo with it in many cases in which vasomotor disturbance was evidently a factor.

Para-Osteo-Arthropathy. — The further experience of Dejerine and Ceillier has confirmed the frequency of intramuscular ossification. It was evident in about half of eleven cases of paraplegia from injury of the spinal cord .

Neuralgia of the Sympathetic System.—Tinel applies this term to spontaneous causalgia, reporting seven cases affecting the hands, legs, face or neck, or the pelvis. Like the traumatic causalgia in the war wounded, there is always some irritation or compression of the sympathetic centers involved, inducing in the latter a special erethism. This in turn causes the local neuralgia with a sensation of tension, numbness, and burning pain, with vasomotor disturbances. Experience has shown that these neuralgias tend to subside under physical and mental rest. No drugs or surgical interventions give relief as a rule. The patient can be encouraged that rest, hygiene and psychotherapy will put an end to the disturbances sooner or later.

Paris Médical

March 5, 1921, **11**, No. 10

*Progress in Dermatology and Venereology in 1920. Milian, Brodier and Mouquin.—p. 177.
Infantile Syphiloid Vacciniform Ecthyma. Petges and Rocaz.—p. 190.
*The Posterior Urethra in Acute Gonorrhea. M. Carle.—p. 196.
Discovery of Syphilis Spirochetes in Semen. M. Pinard.—p. 198.
Pathogenesis of Psoriasis. L. Bory.—p. 200.
*Test Hemoclasis in Recent Syphilis. Galliot and Gerbay.—p. 205.

Progress in Dermatology and Venereology.—This comprehensive review states that the extent of the rôle of anaphylaxis in the production of skin diseases is being realized more and more every day as the works of Widal and his pupils on the hemoclasic crisis and its significance have thrown light on the pathogenesis. Danysz has traced a large number of skin diseases to anaphylaxis from absorption through the bowel walls, curable by antianaphylaxis on this basis, as described in these columns, Sept. 11, 1920, p. 771. He has cured by this means cases of psoriasis, urticaria and eczema with no recurrence during the more than four years since. [Most of the works reviewed have already been summarized in THE JOURNAL during the year.] The only vaccines that have proved useful in dermatology are Danysz' entero-antigens and antistaphylococcus vaccine. Radiotherapy as an adjuvant to the ordinary measures in treatment of lupus has shortened by one half the duration of the course, according to Cottenot. The present prevalence of syphilis in the rural districts is commented on, and also Belgodère's suggestion of the possibility of flies transmitting the disease after contact with syphilitic ulcerations or linen soiled by them. The question as to the unity of the syphilis agent is still being debated, as mentioned editorially, March 26, 1921, p. 864. There new cases of syphilis reacquired three and five years after a cure under arsphenamin have been published at Paris during the year. There have also been reported cases of syphilitic nephritis, jaundice or periosteitis all developing during the period between the chancre and the roseola. The evidence to date seems to demonstrate that the colloidal gold reaction in the cerebrospinal fluid is the most sensitive, persisting after all the other reactions have long given normal findings. Influenza seems to annul the Wassermann reaction but leaves the gold reaction unmodified. Many consider the latter peculiarly important for the diagnosis. Mercury has regained its place in treatment of syphilis, Sabouraud and others having protested against exclusive reliance on the arsenicals. The review concludes with recent measures for prophylaxis for the individual and the offspring, citing Pinard and Hoch's discovery of spirochetes among the spermatozoa in the semen from three of eleven syphilitics with apparently sound testicles.

The Posterior Urethra in Acute Gonorrhea.—Carle protests against the assumption that the posterior urethra is necessarily involved in acute gonorrhea. Experience has converted him to the conviction that posterior urethritis when not complicated with prostatitis, is merely a transient congestion. The chronic course and relapses in 90 per cent. of the cases are due to glandulitis or infiltrations of the anterior urethra. He warns to wait until the canal is dry and the second glass absolutely clear before beginning the injections. They should be kept up for three weeks at least, regardless of absence of symptoms. Teach the patient how to make the injections, and impress on him that three or four mild injections are better than the classic morning and evening method with stronger solutions. The amount can be reduced or the intervals lengthened at the least sign of reaction on the part of the canal. He comments on the importance of a suitable syringe for the purpose, air-tight and holding 10 c.c., adding that he does not believe there are any such in France, "or even in the United States, judging from the syringes left in the American army camps, which look as if they had been made for babies. . . ." "Glass syringes defy all the laws of aspiration of fluids." He warns further that with the first sign of difficulty in urination, the therapeutic frenzy must be bridled, trusting to repose, dieting and local and general hot baths, with hexamethylenamin and balsamics. "Refrain from immoderate drinking of fluids; they congest the bladder uselessly. Refrain also from walks, sports, and the vicinity of women, even of platonic friends." Under these simple measures the urine grows clear again, and the terminal topical medication can then be resumed.

Digestion Hemoclasis in Recent Syphilis.—Galliot and Gerbay obtained the response characteristic of digestion hemoclasis in four of seventeen syphilitics taking arsphenamin treatment. It revealed insufficiency on the part of the liver, and this seemed to be the result of toxic action from the drug on the liver. In another group of cases the syphilis itself seemed to be responsible for the impairment of function causing the positive response to the test ingestion of 200 gm. of milk, fasting.

Presse Médicale, Paris

Feb. 26, 1921, **29**, No. 17

Mechanism of Hiccup. H. Roger and E. Schulmann.—p. 161.
*Intrabronchial Injections for Pulmonary Gangrene. J. Guisez.—p. 162.
*Pneumography of Pleural Adherions. R. d'Heucqueville.—p. 164.
*Mechanism of Mountain Sickness. J. P. Langlois and L. Binet.—p. 166.

Intrabronchial Injections in Treatment of Pulmonary Gangrene.—Guisez has applied the technic which he illustrates in twelve cases of severe gangrene of the lung. The temperature returned to normal after a few injections, and the general condition rapidly improved. The expectoration promptly diminished but the fetidity was slower in disappearing. He found that the amount of the disinfectant injected must be 20 c.c.; smaller amounts do not reach the lung. There must be no coughing during the injection, hence anesthesia of the trachea is indispensable. The trunk is bent to one side so that the fluid, dropping from the cannula in the trachea, drops directly into the bronchus on the diseased side. He declares that this method is rational, absolutely harmless, and no inconvenience has resulted from its use to date. Besredka has recently published research on dogs showing that the tracheobronchial apparatus is remarkably tolerant of antiserums in a syrup vehicle. Guisez has used for the injections a 1 per cent. solution of menthol or 5 per cent. solution of guaiacol or other disinfectant in an oil solution. A few of his patients have died since of intercurrent disease and the pulmonary lesions were found completely healed. From ten to twenty injections were made in the different cases, daily or on alternate days, with a day of rest once or twice a week. The patient must recline on the diseased side for half an hour after each injection.

Pleural Adhesions.—The advantage of deep respiration in helping to break up pleural adhesions is demonstrated by the pneumographic tracings reproduced.

Mechanism of Mountain Sickness.—Heger assumes that the rarefaction of the air may induce hyperemia in the lungs and that this congestion in the lungs hampers the work of the heart. This would explain the dyspnea of mountain sickness, and might possibly explain the increased number of blood corpuscles found at high altitudes.

March 5, 1921, 20, No. 19

*Protein Therapy. F. Widal, P. Abrami and E. Brissaud.—p. 181.
*Vaccine Therapy. L. Cheinisse.—p. 188.

Protein Therapy.—This is a complete oversight of the literature and the writers' experiences in this line to date. It is evident that protein therapy has two main fields, completely different. When the composition of the blood is defective, as in hemophilia and paroxysmal hemoglobinuria, the protein therapy stabilizes conditions in the blood, reestablishes the normal balance. On the other hand, in infectious diseases the aim is suddenly and violently to upset the abnormal condition, inducing a shock, the effects of which may be salutary. Peptone answers the purpose for the first indications, that is, all conditions which are traceable to what they call colloidoclasis. Administration of peptone by the mouth is a very simple and harmless method of warding off attacks of urticaria, migraine or asthma, annulling the action of the unknown substances responsible for their development. Complete desensitization may be realized by prolonged use of the peptone. If this fails, other proteins might be tried by subcutaneous injection, or even certain crystalloid substances with which they have been successful. Protein therapy by shock is not yet ready for general application, notwithstanding the brilliant success which has been realized in some cases. It cannot be applied systematically to all the cases of the same disease. The still inexplicable variability of its effects and the impossibility of estimating them beforehand, compel this method to be reserved for exceptional cases in which all else has failed. They quote freely from articles in THE JOURNAL and do not hesitate to declare that protein therapy marks an important milestone in the evolution of therapeutics.

Vaccine Therapy.—Cheinisse devotes this review to the special articles in THE JOURNAL on pneumococcus and vaccine therapy in general. He explains that they were prepared under the auspices of the Council on Pharmacy and Chemistry, and he describes with much detail and laudatory phrases the aims and scope of this council.

Schweizerische medizinische Wochenschrift, Basel

Feb. 17, 1921, 51, No. 7

Roentgenography of Anterior Segment of Eyeball. A. Vogt.—p. 145.
*Coagulation of the Blood. A. Fonio.—p. 146.
Action of Carbonated Baths on the Circulation. S. Hediger.—p. 151.
Experimental Research on Compensatory Hypertrophy. P. Nigst.—p. 155.
Mixed Tumor in Esophagus. M. Kinoshita.—p. 156.

Coagulation of the Blood.—Fonio explains that we have five elements at our disposal for study of coagulation, the coagulation time, coagulation valency, and the properties of the clot, its elasticity, its solidity and its retractility, as well as the bleeding time and blood platelet count. He gives illustrations of the simple devices he has invented for study of the above properties of the clot.

Pediatria, Naples

Feb. 15 1921, 29, No. 4

*Internal Leishmaniasis. P. Foti and N. Javarone.—p. 145.
Composition of Fat in Child Body. A. Bardisian.—p. 156.
*Cerebral Hemorrhage in Infant. L. Conti.—p. 168.

Internal Leishmaniasis.—Foti and Javarone comment on the drop in mortality from 90 or 100 per cent. to only 10 or 20 since tartar emetic has been introduced into the treatment of this disease in children. They give the details of 73 cases treated at Naples by intravenous injection of from 2 to 5 or 7 c.c. of a 1 per cent. solution of the tartrate of antimony and potassium. In young children the external jugular is the most convenient route as a rule. As this drug irritates the kidneys, they must be carefully supervised during the course. There were 17 deaths among the children from intercurrent disease, but in 8 the leishmaniasis had evidently been cured and all the others showed great improvement.

Cerebral Hemorrhage in Infant.—In the case described by Conti the child, 1 year old, presented a puzzling clinical picture explained by hemorrhage in the right hemisphere of the brain. There was no sign of leukemia but chronic nephritis had evidently injured the vessels in the brain as rupture had occurred. Recent research by Riva-Rocci has demonstrated the great fragility of the walls of the blood vessels in children.

Policlinico, Rome

Feb. 28, 1921, 28, No. 9

*The Urine-Hemolysis Coefficient. A. Amati.—p. 287.
Traumatic Parenchymatous Keratitis. A. Rosica.—p. 289.
Foreign Bodies in Esophagus and Air Passages. E. Cavazza.—p. 293.
Catheterization with Enlarged Prostate. G. B. Sigurtà.—p. 297.

The Urine-Hemolysis Coefficient.—Amati tested the hemolytic power of the urine when graduated amounts of distilled water were added to it. Normal urine has so little hemolytic power that the conclusion seems evident that it must contain some substance which prevents hemolysis, as otherwise its behavior would conflict with the laws of osmosis. In all his research he found only six cases showing hemolysis by the urine, and these were patients with chronic nephritis or cancer. Even in these, the findings were not constant. By adding distilled water to the urine it is possible to obtain a coefficient of the urohemolytic power, and this is constant in cases of cancer and chronic nephritis. In healthy urine, hemolysis does not occur until the urine has been diluted about fivefold, but in cancer cases the ratio is reversed, hemolysis occurring with only one-fifth part distilled water. He thinks that the urohemolytic coefficient thus obtained with a set of eight test tubes, containing urine and progressive amounts of distilled water, may aid in the diagnosis of cancer and of nephritis in dubious cases.

Feb. 1, 1921, 28, Medical Section, No. 2

*Heat Sense and Trophic Lesions. P. Albertoni.—p. 49.
*Tumor of the Auditory Nerve. G. Fumarola.—p. 60.
*The Fibers in Peripheral Nerve Trunks. G. C. Riquier.—p. 71.
*Respiration After Laryngostomy. G. Ferreri.—p. 81.

Cutaneous Sensations Compared with Trophic Lesions in Morbid Processes.—Albertoni gives illustrations of the spots sensitive to heat and cold in three cases of Raynaud's disease, calling attention to the diagnostic importance of changes in the thermic sense.

Tumor of the Auditory Nerve.—The patients in two cases reported were men of 26 and 34, and the necropsy findings confirmed the clinical diagnosis of a tumor in the cerebellopontine angle. In one the first symptoms had developed three weeks after a war wound of the head.

The Fibers in Peripheral Nerve Trunks.—Riquier has been studying the arrangement of the groups of fibers in peripheral trunk nerves, emphasizing the importance of the exact distribution of these fibers in operations on nerves. The article is illustrated.

Respiration After Laryngostomy.—Ferreri describes the findings in regard to the respiration, circulation and phonation after intubation or laryngostomy.

Riforma Medica, Naples

Feb. 12, 1921, 37, No. 7

The Teaching of Surgical Pathology. G. Muscatello.—p. 145.
*Test for Coagulating Time of the Blood. M. Gelera.—p. 149.
*Serologic Diagnosis of Hydatid Cyst. E. Pesci.—p. 151.
*Pigmented Skin Lesions. C. Lombardo.—p. 154.
*Syphilis and Raynaud's Disease. A. Ghelli.—p. 156.
Friedmann's Remedy for Tuberculosis. L. Urizio.—p. 157.
Radiography in Stomatology. B. De Vecchi.—p. 159.
*Surgery of the Pituitary Body. E. Aievoli.—p. 162.

Determination of Coagulating Time of the Blood.—Gelera uses a set of 17 small tubes containing, each, 6 drops of a 1 per cent. solution of sodium citrate. Into each tube except the first is dropped physiologic saline solution, increasing the amount by 2 drops. Thus in the second tube there will be 2 drops of the saline, in the third 4 drops and in the seventeenth, 32 drops. The control tube contains merely 6 drops of saline. Six drops from each of the tubes in turn are transferred to slabs partitioned off into cells (*tavolette munite de cellette*). Then 1 c.c. of blood is drawn from the arm and 1 drop is added to each of the cells, and the whole is kept at 37 C. Gelera has found this test simple, reliable and practical. The test reflects both the dilution and the time, which gives it double value. In normal conditions the blood coagulates in 15 minutes at 37 C. in the tube with physiologic solution alone, and by the end of an hour in all the other dilutions after the fifth tube. The coagulating time is retarded in the tuberculous as a rule, although the leukocytes and the alexin

potency may be good. He attributes this to the scarcity of calcium, the demineralization of the organism making its effects felt even in the coagulability of the blood.

Serodiagnosis of Echinococcus Disease.—Pesci reports experiments and clinical experiences which have confirmed the harmlessness of the fluid in hydatid cysts. No symptoms were observed even when this fluid was injected into the heart of a guinea-pig, but active anaphylaxis was constantly observed when an emulsion of the inner wall of the cyst was injected.

Pigmented Cutaneous Lesions.—Lombardo presents evidence that the coloration in pityriasis versicolor and similar dermatoses is the work of the fungi themselves.

Raynaud's Disease and Syphilis.—Ghelfi reports three cases in which, although there was nothing to suggest syphilis at first, the failure of all ordinary measures in treatment of severe Raynaud's disease led to the assumption of a syphilitic origin. This was confirmed by the prompt and complete recovery under specific treatment. In one of the cases several phalanges of the feet had dropped off.

Surgery of the Pituitary Body.—This synthetic review of recent literature shows the progress in this line. In 160 operations on the pituitary that have been recently compiled, the mortality was about 50 per cent. but is gradually decreasing. In the fatal cases meningitis was responsible for the deaths in 70 per cent. The operation serves mostly merely to relieve compression, but the results obtained to date justify intervention for such inevitably fatal lesions.

Anales de la Facultad de Medicina de Lima

November-December, 1920, **3**, No. 18

*Primitive Science and Art in Peru. E. Escomel.—p. 187.
*Galactagog Action of Carbohydrates. R. Eyzaguirre.—p. 205.
Yellow Fever in Peru. C. E. Zapata.—p. 208.
*Blastomycosis. S. Lozada Benavente.—p. 232. Conc'n.
Contribution to the Study of Peruvian Materia Medica. A. Maldonado.—p. 250.

Science and Art in Primitive Peru.—Escomel's twelve reproductions of pottery and of trephined skulls from the days of the Incas show a remarkable knowledge of medicine and surgery. Pitchers and vases depict the face lesions of leishmaniasis, blastomycosis and harelip with accuracy, as he shows by comparing with illustrations of recent cases of the same diseases. The trephining was evidently done for a humanitarian purpose, and the skill shown in these operations presupposes surgical skill in other lines. The physiologic repair after the craniotomy proves that it was done on the living subject, with long survival. There is reason to assume also that the operations were done under general or local anesthesia induced with the plant from which cocain is derived. The trephining seems to have been a decompressive operation.

Carbohydrates Promote Flow of Milk.—Eyzaguirre has been impressed with the increase in the flow of breast milk when carbohydrates are eaten freely. A dish called *chuña* is particularly useful in this line. It is merely boiled rice, sweetened, and flavored with chocolate, a household galactagog that has been adopted by local physicians as they noted its efficacy. The diet should be mainly farinaceous although, he adds, galega seems to be the most effectual galactagog aside from the sucking of the child.

Blastomycosis.—In concluding this illustrated review of blastomycosis in Peru, Lozada emphasizes the importance of keeping up the tartar emetic treatment for a year or more after the lesions have healed under it. The drug has to be given in large doses by the vein up to the limit of tolerance, beginning with small doses. The drug has a cumulative action, but aside from slight phlebitis there are no inconveniences from a well managed course of treatment.

Brazil Medico, Rio de Janeiro

Feb. 5, 1911, **35**, No. 5

*Radium Treatment of Cancers. A. F. da Costa Junior.—p. 73.
The Mosquitoes of Rio de Janeiro. Belisario Penna.—p. 76.

Radium Treatment of Cancers.—Da Costa reviews the experience with 300 cases of cancer given treatment at the Radiology Institute at Rio, the outcome justifying his assertion that for basal-cell tumors the cure is perfect. The cancer retrogresses without leaving a scar, as a rule. No other method of treatment of this type gives such perfect results, he declares, while no other treatment is so convenient, and it is absolutely painless. Four typical examples of epithelioma on the face are illustrated before and after. This class of tumor is usually strictly localized without involvement of glands. These tumors formed 38.66 per cent. of his total 300 cases.

Feb. 19, 1921, **35**, No. 8

*Action of Certain Oils on Bacteria. A. Fontes.—p. 95.
*Radium Treatment of Cancers. A. F. da Costa Junior.—p. 98.
Schistosomiasis. R. da Silveira.—p. 101.

Action of Certain Oils on Bacteria.—Fontes is chief of a service in the Instituto Oswaldo Cruz, and he here reports that addition of 1 per cent. cod liver oil or chaulmoogra oil or beef gall to the ordinary bouillon culture medium prevents the development of cultures of tubercle bacilli. This impeding action is prevented by adding 2 per cent. gelose to the culture medium, which solidifies it. The oil in the fluid culture medium did not lose this inhibiting property even when filtered through porcelain, but admixture of kaolin annulled it. He theorizes that the bacillus absorbs the fat particles and that the latter form an isolating envelop, insulating the bacillus from the nutritive medium and from the oxygen in the latter, thus practically choking it to death.

Radium Treatment of Cancer.—Da Costa relates that 44.66 per cent. of his 300 cancer cases were of the prickle-cell epithelioma type. This group is very malignant, with metastases and gland involvement. Application of radium after excision of the tumor gives most encouraging results. He cites some typical instances of this type with no signs of recurrence during the many months to date. Cancer of the uterine cervix is often amenable to this treatment, but sometimes it proved refractory. Large and frequent doses of the radium rays seem indispensable. The cancer developed in a nevus in 6.33 per cent. of the total 300 cases, and the results of curie therapy were brilliant as he shows by some illustrated cases; the extensive cavity with high edges on the chin of one woman of 46 healed with scarcely a trace of a scar. Sarcomas formed 10.33 per cent.; great improvement was realized in some, but in others no benefit was apparent. The most striking case illustrated was that of a man of 58 with a fibrosarcoma in the parotid region. It protruded so that it doubled the diameter of the neck. No effect was realized under two months of cross-fire radium treatment, but then the radium was embedded in the tumor, and in five applications—a total of seventy-seven hours—the tumor subsided almost completely, leaving merely the scarcely noticeable fibrous base. This patient was a syphilitic, with positive Wassermann reaction.

Gaceta Médica de Caracas, Venezuela

Jan. 15, 1921, **28**, No. 1

Abdominal Versus Vaginal Obstetric Palpation. D. Lobo.—p. 1.
Inaugural Lecture of Bacteriology Course. J. M. Romero Sierra.—p. 4.
Inaugural Lecture of Histology Course. Inocente Carvallo.—p. 9.
Inaugural Lecture of Surgery Course. J. M. Espino.—p. 10.

Revista Médica de Chile, Santiago

January, 1921, **49**, No. 1

*Torsion of the Uterus. J. Alvarado.—p. 1.
*Bone Implant in Pott's Disease. J. Alvarado Wall.—p. 3.
Bacteriotherapy. Mamerto Cadiz.—p. 8.
*Thrombophlebitis of Cavernous Sinus. C. Charlin C.—p. 27.
*Suture of Blood Vessels. A. Ibañez Benavente.—p. 35.
Radiology of Digestive Tract. A. Kaplan.—p. 40.
Artificial Anus. G. E. Münnich.—p. 45.
Echinococcus Disease in Santiago. J. Noe.—p. 62.

Torsion of the Uterus.—Alvarado reports a case which shows the difficulty that may be encountered in diagnosing an ovarian tumor when the uterus is twisted on its axis. In this case the left adnexa had been dragged into the right side of the abdomen.

Bone Implant in Pott's Disease.—Alvarado applied the Albee technic in a boy of 13 to introduce this method in Chile.

Thrombophlebitis of Cavernous Sinus.—Charlin remarks that ophthalmocavernous thrombophlebitis is not so rare as generally supposed, the patient often dying without correct

diagnosis. He here reports two new cases supplementary to his previous communication on the subject. The main symptoms are the high fever, the exophthalmos, edema in the lids and other orbital symptoms, and the symptoms indicating irritation of the meninges and brain, headache, somnolency, torpor, and coma. These five cases teach that with these symptoms the cavernous sinus should be opened at once. In four of the cases there had been symptoms for a week, but the physician had not realized the danger, and surgical measures were not applied until too late, and all died. When the orbital symptoms have developed, there is no chance of success by acting merely on the peripheral localization. The base of the skull must be reached. He advises immediate bacteriological examination of the blood as this will guide to causal therapy. The thrombophlebitis once diagnosed, the best intervention is to open and drain the cavernous sinus through the orbit by the Krönlein technic. He cites the technic as given by Keen.

Suture of Blood Vessels.—Ibañez describes a method of suturing a blood vessel in two planes. He turns back each stump of the vessel like a cuff, and sutures the folded over edges together all around. Then he turns back the cuffs and sutures their outer edges together, thus reenforcing the inner suture with a second row. At first the cuffs are held up in place with three stitches until the first plane of suture is completed. Then those three stitches are cut, the cuffs turned back and the other edges are sutured together to reenforce the inner plane. By this method the lumen of the vessel is not narrowed in the least, as with the Carrel technic, and it always proved a success in his eighteen experimental operations of the kind, even with an implanted segment of a vessel.

Semana Médica, Buenos Aires

Oct. 28, 1920, **27**, No. 44

*Asthma and Its Treatment. E. Mariño and M. J. Barilari.—p. 567.
*Fulguration for Tumors of Nasopharynx. L. Samengo.—p. 570.
Diphtheria Antitoxin in Treatment of Epidemic Encephalitis. B. Castilla Sastre and F. A. Bourdet.—p. 575.
The Neuropathic Diathesis. Efraín Martínez Zuviría.—p. 577.
Ferrán's Vaccine Therapy of Tuberculosis. A. Milano.—p. 583.
Internal Secretions and Tuberculizable Soil. J. A. López.—p. 586.
Hypnotism Combined with Psychanalysis. A. Forel.—p. 588.

Asthma and Its Treatment.—Mariño and Barilari regard the thymicolymphatic constitution as the soil on which asthma may develop from various causes. They accept this status as equivalent to vagotonia. It implies an inherited morbid taint, and this is generally alcoholism or syphilis. The soil should be treated with all the physical and natural methods at our disposal, especially with climate, heliotherapy, hydrotherapy, respiratory exercises, strengthening the body and hardening it to cold, with proper diet and organotherapy, arsenic, iodin etc. They declare that the asthma is never of tuberculous, pneumococcus or specific origin; these infections merely settle in a favorable soil. In nearly all cases of vagotonia there is enlargement of the glands in the tracheobronchial region. Whatever the cause of this adenitis, it induces inflammation around and direct irritation of the vagus nerve, and this in turn brings on the attack of asthma.

Fulguration for Tumors of the Nasopharynx.—Samengo confirmed the remarkable hemostatic power of fulguration in a case in which recurring hemorrhage had kept up for forty-eight hours after removal of a tumor in the nasopharynx. The special advantages of this method are the rapid, solid healing, and the absolutely localized effects. The technic is illustrated as applied in four cases of which the details are given.

Deutsche medizinische Wochenschrift, Berlin

Dec. 9, 1920, **46**, No. 50

Studies on Tuberculosis. W. Kolle and H. Schloasberger.—p. 1381.
Mercurial Treatment of Syphilitic Eye Disease. J. Hirschberg.—p. 1382.
Gangrene of Lung and Fusospirillar Symbiosis. H. C. Plaut.—p. 1384.
Brain Culture Medium for Gonococci. A. Pettersson.—p. 1385.
Own Urine Reaction in Pulmonary Tuberculosis. Bressel.—p. 1385.
The War in Relation to Scrofulous Eye Disease. Dohme.—p. 1387.
*Disturbance of Sleep Following Encephalitis. A. Janecke.—p. 1388.
Case of Invagination plus Internal Strangulation. K. Wohlgemuth.—p. 1389.
*Prevention of Pain Following Amputations. A. Solomon.—p. 1390.
Metal Foils in Practical Surgery. Gretsel.—p. 1391.
*Effect of Hardness of Water in Health and Disease. K. Opitz.—p. 1391.
Calcium Therapy and Skin Protective Function. Veilchenblau.—p. 1393.
Senile Cataract and Cataract Operations. K. Steindorff.—p. 1394.

Postencephalitic Insomnia.—Reviewed editorially, p. 934.

Prevention of Sensory Disturbances After Amputations.—Salomon has tried in eleven reamputation cases and two of amputation neuralgia the freezing method recommended by Trendelenburg and Läwen. The surrounding soft parts were first well protected with sodium chlorid compresses. The nerve is drawn out to a considerable distance and a metal casing placed over it for protection; he used for this a pencil case. Ethyl chlorid is then sprayed directly on the nerve at the upper edge of the casing, about 4 or 5 cm. above the transverse incision. The nerve becomes frozen in from one to two minutes, is kept frozen for four minutes, and is then allowed to thaw out, which requires several minutes. Then the freezing process is repeated. Afterward the nerve is divided about 2 cm. below the point of refrigeration. If several large nerve trunks are involved, all must, of course, be frozen. The postoperative pains were much less than usual; in fact, with the exception of one case, were scarcely noticeable, but in this one patient they were more severe than in former operations, for the first four days, but then they ceased entirely. Patients who had been reamputated before could note a marked improvement over former operations. The only objection to the method, he found, was the extra time required. However, as a quicker means of accomplishing the same end, Salomon has tried alcohol injections in three cases, with good results. He injected from 1 to 2 c.c. of alcohol 3 or 4 cm. above the cut surface. The sensations in the lost foot disappeared immediately after the injection and had not returned at last accounts (eight months later). If these experiences with alcohol injections should be confirmed by further trials, Salomon thinks his modified method may prove to be preferable to the somewhat complicated freezing process.

Effect of Lime in Drinking Water.—Opitz presents a table showing the results of his extensive investigations on the effect of the hardness of drinking water on the population using it. In Group 1 he considers communities with drinking water having a hardness of less than 10 degrees; in Group 2, those in which the drinking water possesses from 10 to 31 degrees of hardness, and in Group 3 those that used drinking water with more than 30 degrees of hardness. He found that communities with very hard drinking water were much better off than those using soft water as regards the frequency of dental trouble in schoolchildren, in registrants for military service and disability claimants; also as regards the frequency of rachitic teeth in schoolchildren, the body weight and degree of robustness in registrants for military service, the vitality of the new-born, and the frequency of signs of nervous hyperexcitability in infants, in schoolchildren and in those insured against invalidity. There was also a slight advantage as regards the size of the new-born and of schoolchildren and also with reference to mortality from tuberculosis. Communities with soft water had the advantage as regards the frequency of calcification of arteries in recipients of invalidity allowances. The degree of hardness of the water had no perceptible influence on the size of the registrants for military service, on the number of stillbirths, the birth and death rate, and the frequency of tuberculosis in those insured against invalidity.

Deutsche Zeitschrift für Chirurgie, Leipzig

December, 1920, **160**, No. 5-6

*Constitutional Pathology of Surgical Diseases. K. H. Bauer.—p. 289.
*Blood Picture During Heliotherapy. K. Köster.—p. 352.
*Operative Treatment of Aneurysms. E. O. Schmidt.—p. 380.
*Abdominal Wounds. A. Steiger.—p. 413.

The Constitutional Pathology of Surgical Diseases.—Bauer has had the opportunity of clinical and histologic study of osteogenesis imperfecta in a 7 months' fetus and of idiopathic osteopsathyrosis in a boy of 11. His research has not only confirmed that the two are merely different stages of an identical process, but has further demonstrated that this process is an inheritable, constitutional anomaly of all the tissues derived from the mesenchyma, not merely of the bones alone. He cites families in which different members had one or the other simultaneously, and this repeated through generations. The connective tissue, the blood vessels and the lymphatics

all show the imprint of the primary defect in the formation of the mesenchyma. The result is a characteristic habitus and temperament as well as the abnormal structure of part of the body. He illustrates his cases and compares them with the literature on constitutional pathology. This conception of defective development of one of the germinal layers or of certain tissues derived from it provides a new principle for classification and linking up of diatheses and constitutional anomalies.

The Blood Picture During Heliotherapy.—Köster tabulates the repeated differential blood count in fifty cases of bone or joint tuberculosis taking regular sunbath, outdoor treatment in the Swiss mountains. The erythrocytes increased in number in the majority, but only once reached the altitude figure given in the literature, and the numbers declined in many cases, even in some that were progressing favorably. The hemoglobin percentage increased materially in nearly all.

Operations for Traumatic Aneurysms.—Schmidt summarizes thirty-six operative aneurysm cases, and discusses the indications with aneurysms at different points. Suture was attempted in only four of the cases, but the ligature was sometimes applied high up on the vessel, for example, on the common femoral artery, just below the mouth of the deep femoral, for an aneurysm in the popliteal artery. The blood stream can sometimes be diverted, as with an end-to-side anastomosis of the external carotid with the internal carotid, below an aneurysm in the latter. The immediate results were good in all but four of the cases, and in two of these the operation could not be incriminated for the fatal outcome.

Wounds of Liver and Intestines.—The four instructive cases described show the importance of the local pain. Even when signs pointed to another region of the abdomen, Steiger found it safer to operate at the point where the patient said it "hurt the most." In one of the cases the lower surface of the right lobe of the liver was bleeding from a 10 cm. long and deep wound, large enough for four fingers. But after this cleft was packed tight, the abdomen was sutured; the gauze was removed the ninth day, and healing was complete the sixth week except for a small fistula.

Mitt. a. d. Grenzgeb. d. Med. u. Chir., Jena

1920, **33**, No. 5

*Duodenal Disturbance from Adhesions. A. Foerster.—p. 587.
Shape of the Stomach. J. Volkmann.—p. 607.
*Influence on Coagulation of Thromboplastic Substances. A. Szenes.—p. 627.
Sensibility of Flap in Remote Plastic Operations. W. Lehmann and E. Jungermann.—p. 653.
*The Narrow Portions of the Stomach. K. Westphal.—p. 659.
*Congenital Hemolytic Jaundice. H. Sauer.—p. 696.

Duodenal Disturbances from Adhesions.—Foerster reports nine cases in which the diagnosis of duodenal ulcer seemed beyond question, including all the roentgen-ray and clinical findings and the history of the cases. The operation revealed, however merely adhesions between the duodenum and the gallbladder or the colon. No changes indicating previous ulceration could be detected in six of the cases. One patient had had hemorrhages several years before and in another, signs of a healed ulcer were found at necropsy. Otherwise the changes were entirely outside of the duodenum, and only in one instance was there anything found suggesting abnormal conditions in the gallbladder at any time. The irregular alternation of periods with and without pain shows that these chronic changes alone are not enough to account for the disturbances or they would be continuous. Some unknown factor must be superposed. Little can be accomplished by therapeutic measures. Even surgical intervention breaking up the adhesions does not ensure a permanent cure. The tendency to formation of adhesions persists, and in four of his cases new adhesions developed and the old symptoms returned. The patients were three women between 23 and 39 and six men between 23 and 41. The only case with signs of an old healed ulcer terminated fatally as peritonitis developed after the laparotomy. Four of the patients have been free from all disturbance during the months to date.

To Promote Coagulation of Blood.—Szenes' experimental research with various thromboplastic substances has demonstrated that calcium by the vein is the most effectual substance known to date for inducing coagulation of the blood. Next comes an extract of blood platelets given by the vein in hypertonic saline; next to this he ranks transfusion of blood, and, lastly, a simultaneous injection of a 10 per cent. solution of sodium chlorid by the vein with an organ extract subcutaneously and locally. The hypertonic saline draws the thromboplastic substances into the blood, and we increase the supply of these substances by injecting the organ extract subcutaneously at the same time. He used for the purpose the extract expressed from human goiters, lungs and testicles. To prepare a bleeder for an operation, he gives calcium preparations by the mouth for several days beforehand. If he has only hours at his disposal, he gives by the vein, two hours before the operation, 40 c.c. of a 10 per cent. solution of sodium chlorid. Or else he gives a subcutaneous injection of an organ extract, an hour or two before the operation, with a calcium preparation by the vein at the same time, or intramuscularly when it can be given an hour so before. The work issues from Eiselsberg's clinic at Vienna, and analyzes experiences with a number of patients. They confirm the lack of thrombogen in the blood plasma in hemophiliacs and its abundance in the normal. When more of it is injected into the normal, the surplus is liable to induce severe toxic symptoms, while the anemic and hemophiliac bear it without the slightest tendency to toxic action.

The Narrow Portions of the Stomach.—Westphal seeks to explain the predilection of ulcers for certain sites in the stomach and their chronic course by the mechanical arrangement of the narrower segments, constriction from clothing and spasmodic contraction. Treatment of ulcer might therefore include atropin and the extensive application of cataplasms as hot as can be borne, two or three times, for three hours a day after meals, possibly hot enough to cause a burn of the first degree and browning of the skin, to overcome the spasm. The modification induced by this external heat has been known to put an end completely to six-hour retention. To reduce the mechanical irritation, the food for three months at least should be finely divided, with very little cellulose. For at least four weeks a careful course of reclining should be enforced, so that the soft and nonirritating food would pass along the posterior wall and spare the lesser curvature and reach the pylorus in small amounts at a time. This would give the danger points a chance to rest and recuperate.

Congenital Hemolytic Jaundice.—Sauer has removed the spleen in five cases of this kind in the last few years; in two boys of 11 and 16, a girl of 9, and a woman and a man, both 38. In four of the cases, the disease was inherited. The intensity of the jaundice fluctuated, at times subsiding completely. The spleen was much enlarged in all, it was larger the older the patients, but there was no ascites, and no diarrhea, and nothing to indicate syphilis in the family. The patients have all been examined regularly during the years since the splenectomy. In three the blood shows no further pathologic tendency, and the patients all said they felt as if newly born after the operation. In three of the cases the cure was complete and has been permanent for three up to seven years to date. The spleen cannot be incriminated for the whole process, however, as the abnormally low resistance of the erythrocytes to hypotonic salt solution still persists. The anomaly is to be sought in the blood corpuscles themselves, Sauer thinks. The main seat of the destruction of the peculiarly fragile erythrocytes lies in the spleen. He cites as important some recent research by Holland, Lommel and Beckmann who found the blood corpuscles apparently normally resistant in some cases of true hemolytic jaundice.

Münchener medizinische Wochenschrift, Munich

Dec. 10, 1920, **67**, No. 50

Nature and Origin of Diastasic Ferments. W. Biedermann.—p. 1429.
*Indications for Intravesicular Intervention. P. Janssen.—p. 1431.
*Renal Glycosuria in the Early Diagnosis of Pregnancy. E. Frank and M. Nothmann.—p. 1433.
Modification of Radical Operation for Inguinal Hernia. Ahrens.—p. 1434.
Oligodynamic Effects of Metals on Growth of Bacteria. Seiffert.—p. 1437.
*Sodium Chlorid Solution for Ulcus Cruris. F. Kraus.—p. 1439.
Course of Exudative Erythema Multiforme. H. Katzenstein.—p. 1439.
*Causes of Rectal Fistula. Thoss.—p. 1440.
Apparatus for Treatment of Larynx with Ultraviolet Rays. F. Noll.—p. 1441.
Quartz Laryngeal Mirror for Use with Ultraviolet Rays. H. Ladebeck.—p. 1442.

Significance of the Varying Positive Serum Reaction in the Arsphenamin Treatment of Seronegative Primary Syphilis. Gennerich.—p. 1442.
Swiss Welfare Work for German Children. E. Abderhalden.—p. 1444.

The Indications for Intravesicular Intervention.—Janssen commends the method of electrocoagulation as introduced by Beer (New York). He praises the simplicity of the apparatus, the mode of application and the speed with which perfect results can be secured. The current is derived from an ordinary thermopenetration apparatus. In a series of cases of bladder tumors the destruction of the growths was accomplished without the slightest postoperative hemorrhage. Janssen has no hesitation in giving ambulant treatment owing to the harmless nature of the intervention. In the rare cases in which the tumor is located at the outlet or at the vertex of the bladder, electrocoagulation is contraindicated, as the apparatus is inadequate. In large benign papillomas which occupy a large portion of the bladder, electrocoagulation is also contraindicated, as the sittings would have to be unduly prolonged. Also in malignant tumors and in certain tumors of doubtful malignancy, electrocoagulation is not the method of choice as it does not guarantee thorough destruction of the base of the tumor and therefore does not protect the patient against recurrence. In such cases extensive resection of the bladder wall can scarcely be avoided.

Renal Glycosuria as an Aid in the Early Diagnosis of Pregnancy.—Frank and Nothmann report as the result of their investigations that in thirty pregnant women alimentary glycosuria was produced in every case during the first three months of pregnancy. Renal glycosuria thus can be used as a means of early diagnosis of pregnancy after the first suspension of the menses, when other gynecologic tests can furnish no definite diagnosis. The test is made with 100 gm. of chemically pure grape sugar ingested in 350 or 500 c.c. of tea, after the catheter has been introduced into the bladder, and the urine is examined every fifteen minutes for sugar. The blood was examined for sugar before and during the test. The glycosuria developed in about forty-five minutes and was always moderate, never above 0.9 per cent.; usually it was between 0.2 and 0.5 per cent. The blood sugar kept within normal range. They think that we can count on this test in from two to three weeks after conception occurs. In a case of tubal pregnancy, the response was positive, while it was constantly negative in the cases in which pregnancy was disproved later. An alimentary glycosuria after test ingestion of starch was also noted in 60 per cent. of the pregnant women.

Treatment of Ulcus Cruris with Strong Solutions of Sodium Chlorid.—Kraus states that a 10 per cent. solution of sodium chlorid proved efficacious in the treatment of inflammation of cellular tissues of all kinds. Of late he has tried the sodium chlorid solution in connection with the treatment of ulcer of the leg and with pronounced success. After careful cleansing of the ulcer with a 10 per cent. sodium chlorid solution, a bandage dipped in the same solution was applied every morning. In the evening, after removing the bandage, the dressings were again moistened with the solution. The ulcer became rapidly smaller. The developing granulations were touched every two or three days with silver nitrate. Even large ulcers healed in ten days. To the site of the ulcer 4 per cent. ointment of boric acid was applied, for about ten days longer, and covered with a protective bandage.

Rôle of Tuberculosis in Rectal Fistula.—Thoss states on the basis of an extended inquiry that from the microscopic standpoint, tuberculosis as the cause of rectal fistula can be recognized in only 5.5 per cent. of the cases. Viewed from the standpoint of the general condition of the patient, the indications are that tuberculosis was the cause in 11.9 per cent. of all cases.

Wiener klinische Wochenschrift, Vienna

Nov. 18, 1921, **33**, No. 47

Stasis Hyperemia to Enhance Action of Tuberculin Treatment. O. Paneth.—p. 1021.
Morphin Allergy of Human Skin. A. F. Hecht.—p. 1023.
Nitrogen Content of Urine in Chronic Undernutrition. Klara Kohn.—p. 1027.
Clinical Aspects of Disease of Median Lobe of Cerebellum. F. Fremel and P. Schilder.—p. 1030.

Zeitschrift für Tuberkulose, Leipzig

December, 1920, **33**, No. 3

*Tuberculosis Acquired in Nursing Service. H. Braeuning.—p. 129.
*The Kidneys in the Tuberculous. O. Kieffer.—p. 137. Conc'n.
*The Other Lung with Artificial Pneumothorax. E. Schill.—p. 149.
Vaccination of Cattle with Attenuated Tubercle Bacilli. H. Haupt.—p. 157.
*Tuberculosis and Nostrums. K. Klare.—p. 161.

Tuberculosis Contracted in Nursing Service.—Braeuning investigated conditions at Stettin among nurses in the hospitals. He found thirty-six known to be tuberculous and ninety-six supposedly healthy nurses, and concludes that tuberculosis does not seem to be more prevalent among nurses than among other self-supporting women. But in from 15 to 30 per cent. of the cases no cause outside of the nursing employment could be incriminated. In prevention, he urges better training of nurses, and reliance on boiling rather than on disinfectants for cuspidors, etc. Occasionally, he remarks, there seems to be a pathogenic influence in the care of far advanced cases, particularly of laryngeal tuberculosis, which breeds infection even with scrupulous hygiene. Aside from this, he says, the tuberculosis morbidity among nurses should be far less than that among self-supporting women in general.

The Kidneys with Pulmonary Tuberculosis. — Kieffer emphasizes the importance of detecting pathologic conditions in the kidneys with mild pulmonary tuberculosis, as proper treatment then may ward off serious damage. Focal nephritis is generally rebellious to all treatment. With much hematuria, salt should be restricted, but he warns not to upset the precarious balance of the appetite by this restriction of salt. He warns further against trying to flush the kidneys by copious drinking or a milk diet, as this throws too much extra work on the heart and exaggerates the catarrhal conditions in the lungs. It may prove useful however to occasionally interpose a day of restriction of fluids by the Karell method, possibly every five or six days. In treatment of nephrotic edema, restricted intake of fluid and salt is important but difficult to enforce in the tuberculous. Nowhere is it more important to differentiate the type of the kidney disease than in the tuberculous, as different treatment is required to refrain from doing harm, as he explains in detail. The heart must be supervised with special care. Large doses of urea sometimes prove the most effectual diuretic with edema, but the patients soon begin to object to it. Diffuse glomerular nephritis with cardiovascular symptoms he advises to treat by Volhard's method of alternating days of starvation and thirst with a day of copious intake of fluid, as for the water test.

Influence of Artificial Pneumothorax on the Other Lung.—Schill urges that two or three months of repeated examination of both lungs should precede the artificial pneumothorax. This is the only means to determine with precision whether the compression of one lung has an injurious influence on the other. There is no convincing evidence of this on record to date, he says. The processes observed in the noncompressed lung would probably have taken about the same course in any event.

Tuberculosis and Nostrums.—Klare gives his fourth annual review of this subject. He says that since the war the organized profession and the state authorities are working harder than ever before to check the activities of quacks, but very little has been accomplished. The news of the fines and penalties imposed does not get to the public, and the profits of quackery are such that fines can be easily paid and the work go on. He gives a list of the most advertised nostrums for tuberculosis.

Zentralblatt für Chirurgie, Leipzig

Nov. 20, 1920, **47**, No. 47

*Extirpation of Suprarenals in Epilepsy. O. Bumke and H. Küttner.—p. 1410.
*Filling Body Cavities with Oxygen. C. Rosenberger.—p. 1411.
Nasoplasty from the Upper Lip. J. F. S. Esser.—p. 1412.
Fronto-Occipital Head Bandage. F. Härtel.—p. 1414.
Simple Method of Fastening a Catheter. J. J. Stutzin.—p. 1416.
"Remarks on Renal Calculus Operations." M. Zondek.—p. 1417.

Extirpation of Suprarenals in Epilepsy.—Bumke and Küttner recommend a different operative technic from Brüning. They say that with laparotomy there is considerable difficulty in locating the suprarenals, whereas from the lumbar region

the organs are found without any trouble. They operate on the left side as does Brüning. They describe their technic in detail.

Filling Body Cavities with Oxygen for Roentgen-Ray Examination.—Rosenberger describes his simple method of filling the abdominal cavity or the joints with oxygen for roentgen-ray examination.

Zentralblatt für Gynäkologie, Leipzig

Nov. 27, 1920, 44, No. 48

*Pneumoperitoneum in Gynecologic Practice. A. Mayer.—p. 1370.
*The Failure of the Sigwart Sign. R. Salomon.—p. 1375.
*Fistula Cervicis Uteri Laqueatica. V. Hiess.—p. 1378.
*Formation of Artificial Vagina. F. Neugebauer.—p. 1382.

Diagnostic and Therapeutic Value of Pneumoperitoneum in Gynecologic Practice.—Mayer states that gynecologists would do well to follow the example of surgeons and internists and make wider use of pneumoperitoneum. He describes his technic, and sums up what pneumoperitoneum can be expected to accomplish. Small, obscure abdominal hernias can be demonstrated. Adhesions of the omentum and the intestine are revealed clearly and distinctly, which is of great diagnostic value when spastic occlusion and various forms of hysteroneurasthenia have to be considered. Under certain circumstances the otherwise obscure starting point of neoplasms may be discovered. A tumor of the abdominal wall can be easily distinguished from a tumor back of the rectus (myoma), and pseudogenital tumors may be traced to their real starting point. The character and the extent of peritoneal adhesions and indications of pelviperitonitis can be easily established. The involvement of the intestine in malignant ovarian growths may be directly elucidated. The difficult features of an operation can be better estimated beforehand, and many an exploratory laparotomy be rendered unnecessary. Aside from the diagnosis, the method has also a certain therapeutic value as was shown by the fact that two women with adhesions were relieved of their symptoms, without operation, in from eight to fourteen days. Other writers have reported favorable therapeutic effects by the mechanical breaking up of adhesions. The gas may possibly exert a bactericidal action and promote resorption by the hyperemia it induces.

The Sigwart Sign of Pathogenicity of Streptococci.—Salomon reports the results of his experiments and states that the Sigwart sign does not suffice to distinguish between pathogenic and nonpathogenic streptococci.

The Pathogenesis of Posterior Cervicovaginal Fistulas.—Hiess reports two case histories in support of Wiczynski's view that constitutional factors play an important part in development of these fistulas.

Plastic Construction of Vagina in Congenital Absence.—Neugebauer says that, as regards the formation of an artificial vagina, there are now only two methods contending for supremacy; namely, the Baldwin-Haeberlin method (formation from the small intestine) and the Schubert method (formation from the large intestine). All the other methods that were formerly used have had to strike sail before these superior methods. Neugebauer reports five cases in which the small intestine was used. He admits that occasionally necrosis occurs on the outer edge of the portion of the intestine that is drawn through, but this does not affect the final result. There is also a tendency to shrink, which requires after-treatment for several weeks. At first, coition causes some discomfort, and there is often considerable secretion, but these inconveniences soon pass away. The late results (nine and ten years after operation) are entirely satisfactory.

Zentralblatt für innere Medizin, Leipzig

Nov. 13, 1920, 41, No. 46

Experiences with the "Serologic Diagnosis of Carcinoma." R. Wigand. —p. 786.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Jan. 29, 1921, 1, No. 5

Psychic Rhythm in Relation to the Heart Beat and Respiration Rate. J. C. Goudriaan.—p. 478.
Pathologic Anatomy of Friedreich's Disease. Rombach.—p. 504.
Pedunculated Cancer of the Larynx. H. Burger.—p. 511.
*Danger from Pituitary Treatment. B. J. W. van Eerten.—p. 513.
Premature Separation of the Placenta. A. Verschoor.—p. 515.

Danger of Pituitary Treatment.—In one of the two cases the child could not be revived after delivery, twenty minutes after injection of pituitary extract. In the second case, severe collapse followed the injection of the pituitary extract after the child had been safely delivered. The uterus contracted violently with severe pains, and nausea at each contraction. After half an hour of this there was complete collapse with imperceptible pulse. It improved under saline infusion, but then the severe labor contractions began anew with vomiting, the pulse growing worse at each contraction. Under camphorated oil and 5 mg. of morphin the condition improved and the case proceeded normally thereafter. The first patient was a primipara. The second had had ten spontaneous and easy deliveries before, but the labor contractions had always been exceptionally severe. This latter fact should have warned against the use of pituitary extract.

Acta Medica Scandinavica, Stockholm

Feb. 4, 1921, 54, No. 4

*The Glycosuria Threshold. K. Faber and A. Norgaard.—p. 289.
*Idem in Diabetics. K. Faber and A. Norgaard.—p. 313.
*The Function of the Pineal Gland. S. Zandrén.—p. 323.
*Mode of Action of the Universal Light Bath. C. Sonne.—p. 336.

The Glycosuria Threshold.—Faber and Norgaard report the case of a woman of 29 who for three years has been known to be subject to renal glycosuria, the urine containing from 60 to 80 gm. of sugar on the ordinary diet. She seems in excellent health notwithstanding the 5 or 6 per cent. glucose in the urine. In another case about 1 per cent. of sugar has been found in the urine of the man, now 29, for twenty-two years; an older brother has a similar renal glycosuria. In both cases the sugar content of the blood was normal and the glycosuria persisted through the twenty-four hours. A low threshold for sugar in the kidneys seems the most plausible explanation. In a third case the urine contained only the normal amount of sugar in the morning but after meals it ran up to 0.118 or 0.152 per cent. although the blood sugar kept within normal range. It was thus a case of cyclic glycosuria of the renal type.

Glycosuria Threshold in Diabetes.—Faber and Norgaard tabulate the blood sugar findings in 32 diabetics at the moment when the urine had been about freed from sugar by fasting treatment. The sugar content of the blood at this moment ranged from 0.19 to 0.09 per cent. In sixteen of the patients this examination was repeated several times as glycosuria developed again, and again yielded to appropriate treatment. The intervals ranged from one to twenty months, but the individual blood sugar threshold was found identical each time.

The Pineal Gland.—Zandrén describes the clinical course and necropsy findings in a case of infantilism in a boy of nearly 17 with total absence of the pineal body. The boy had developed normally to the age of 10, but none of the phenomena of puberty followed. The thyroid and hypophysis seemed normal, but the structure of the testicles corresponded to that of the age of 2. In the seventy cases on record of tumor of the pineal gland, most were in adults, but ten were in boys below the age of puberty, and these all presented precocious and pronounced development of the primary and secondary sexual characteristics, and some a certain degree of mental precocity. Zandrén's case and the literature cited seem to suggest that the main function of the pineal gland is to initiate the puberty process, probably by its hormone stimulating the sexual glands to exert their specific function.

Mode of Action of the Universal Light Bath.—Sonne reports exhaustive research on this subject from various standpoints. His final conclusion is that the curative effect of phototherapy is due to the heating of a large part of the total blood volume to a temperature possibly exceeding the highest temperature reached in fever, without heating the rest of the body to any appreciable degree. This is the work of the luminous rays, and the effect on oxidations and on production of antibodies is like that of fever without the injurious effects of fever. The work issues from the Finsen Light Institute at Copenhagen. It is Sonne's sixth publication on the subject. All the articles in this number of the *Acta* are in English.